

Higher Education Strategic Partnerships: The Impact of Stellenbosch University's Community Interaction Agreements on Local Development

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Declaration of originality

By submitting this thesis electronically, I declare that the entirety of the work contained herein is my own, original work, that I am the authorship owner thereof (unless to the extent explicitly otherwise stated) and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

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Abstract

In regions throughout the world, there has been little discrepancy that investments in education are critical for the development of the economic and social fabric of the local community. Although many studies have focused on returns of primary and secondary education, recently more academic focus has been applied to higher education as a means to increase economic growth and diminish poverty.

As Southern African Development Community (SADC) countries share a disproportionate number of countries listed among the lowest Human Development Index (HDI) ratings in the world, it is imperative, more than ever, that higher education institutions in the region contribute to the economic growth and vitality of the surrounding community. In a recent study of higher education institutions within the SADC region, South Africa was the only country documented with sustainable and stable funding along with national higher education steering ability.

Beginning in 2007, Stellenbosch University, located in the Western Cape of South Africa, began an unprecedented regional collaboration with the local municipality of Stellenbosch, and later in 2011, the regional municipality of Drakenstein in an attempt to formally engage the surrounding communities both socially and economically. As a result, the university signed memoranda of understanding (MOUs) outlining strategic partnerships that established a framework for the university to address economic growth, municipal development needs, joint social projects and integrating the joint initiatives into the Integrated Development Plan (IDP) of the municipalities.

Within the South African context, it is clear, through the recent South African National Development Plan 2030 and King III Report, that universities will need to develop metrics to account for their broad range of impacts. Internationally, higher education institutions have responded by commissioning economic impact studies that report economic variables with little attention given to social impact. However, South African institutions of higher education should not emulate methodologies of these previous international economic impact studies, but instead develop new conceptual frameworks that relate to the unique social and economic impacts of South African universities.

Furthermore, because of the lack of existing research concerning higher education and local development, little is known about the impact of university interaction agreements on

surrounding communities. To overcome this current knowledge gap, the aim of this study sought to determine if there was a measurable impact of Stellenbosch University's interaction agreements. This was accomplished through a literature overview of higher education policy analysis, higher education and community engagement, higher education and economic development and higher education economic impact studies.

The research incorporates an integrated methodologies approach or FraIM developed by Plowright (2011) that compliments a mixed method design. Additionally, the first part of the study included a qualitative policy analysis using administrator questionnaires, followed by a quantitative review of Stellenbosch University's community interaction efforts using the community interaction database along with project leader questionnaires and concluded with a quantitative university economic impact study.

From the study results, a new integrated conceptual framework is proposed to capture the full socio-economic impact of higher education institutions. The emerging framework articulates the social and economic influence that higher education institutions bring to a community by giving each equivalent weight. Furthermore, the 2012-2013 data illustrated that Stellenbosch University has a substantial social and economic impact on the surrounding municipalities of Stellenbosch and Drakenstein. Additionally, the findings include a list of social and economic performance indicators related to university's community engagement and economic development efforts.

KEYWORDS: Community Engagement, Economic Development, Economic Impact Studies, Higher Education, Higher Education Institution, Human Capital, Knowledge-based Economy and University-Community Interaction Agreements.

Opsomming

In streke regoor die wêreld word daar selde verskil oor die feit dat beleggings in onderwys noodsaaklik is vir die ontwikkeling van die ekonomiese en maatskaplike struktuur van die plaaslike gemeenskap. Alhoewel verskeie studies op die opbrengs van primêre en sekondêre onderwys gefokus het, word meer akademiese fokus algaande op hoër onderwys geplaas as 'n manier om ekonomiese groei te bevorder en armoede te verminder.

Weens die feit dat die Suider-Afrikaanse Ontwikkelingsgemeenskapslande (SAOG-lande) 'n disproporsionele aantal van die lande met van die laagste graderings op die Menslike Ontwikkelingsindeks (MOI) in die wêreld insluit, is dit meer as ooit vantevore noodsaaklik dat hoërondewysinstellings tot die ekonomiese groei en lewenskragtigheid van die omliggende gemeenskap bydra. In 'n onlangse studie oor hoërondewysinstellings in die SAOG-streek is Suid-Afrika uitgewys as die enigste land met volhoubare en stabiele befondsing en nasionale hoërondewysbestuursvermoë.

Met die aanvang van 2007 het die Universiteit Stellenbosch, geleë in die Wes-Kaap in Suid-Afrika, 'n ongekende streeksamewerking met die plaaslike munisipaliteit van Stellenbosch, en later in 2011 die streeksmunisipaliteit van Drakenstein, in die lewe geroep in 'n poging om formeel by omliggende gemeenskappe in te skakel – op sowel maatskaplike as ekonomiese gebied. Dit het gelei tot die universiteit se ondertekening van Memorandums van Verstandhouding (MVV's) wat strategiese vennootskappe skets vir die vestiging van 'n raamwerk vir die universiteit om ekonomiese groei, munisipale ontwikkelingsbehoefte, gesamentlike maatskaplike projekte en die vereniging van gesamentlike inisiatiewe in die vorm van die munisipaliteite se Geïntegreerde Ontwikkelingsplan (GOP) aan te spreek.

In die Suid-Afrikaanse geval blyk dit duidelik uit die onlangse Nasionale Ontwikkelingsplan 2030 en die King-verslag dat universiteite meetinstrumente moet ontwikkel om rekenskap te gee van hulle omvattende impak. Internasionaal het hoërondewysinstellings gereageer deur ekonomiese impakstudies aan te vra wat verslag doen oor ekonomiese veranderlikes terwyl min aandag aan sosiale impak geskenk word. Suid-Afrikaanse hoërondewysinstellings behoort egter nie bloot hierdie internasionale ekonomiese impakstudies se metodologieë navelg nie, maar eerder nuwe denkraamwerke skep wat aansluit by die unieke sosiale en ekonomiese impak van Suid-Afrikaanse universiteite.

Weens die tekort aan bestaande navorsing oor hoër onderwys en plaaslike ontwikkeling bestaan daar min kennis oor die impak van universiteitsinteraksie-ooreenkomste op omliggende gemeenskappe. Om hierdie kennisgaping te oorkom, was die doel van hierdie studie om te bepaal of die Universiteit Stellenbosch se gemeenskapsinteraksie-ooreenkomste 'n meetbare impak gemaak het. Dit is bereik deur 'n literatuuroorsig van hoëronderwysbeleidsanalise, hoër onderwys en gemeenskapskaking, hoër onderwys en ekonomiese ontwikkeling, en studies van hoër onderwys se ekonomiese impak.

Die navorsing inkorporeer 'n benadering van geïntegreerde metodologieë, oftewel "FraIM", wat deur Plowright (2011) ontwikkel is en 'n gemengdemetodebenadering aanvul. Die eerste deel van die studie het gebruik gemaak van 'n kwalitatiewe beleidsanalise deur middel van onderhoude met administrateurs. Dis is opgevolg deur 'n kwantitatiewe oorsig van die Universiteit Stellenbosch se gemeenskapsinteraksiebedrywighede met behulp van die gemeenskapsinteraksiedatabasis en projekleivraelyste. Ter afsluiting is daar 'n kwantitatiewe studie van die universiteit se ekonomiese impak.

Vanuit die navorsingsresultate word 'n nuwe, geïntegreerde denkraamwerk voorgestel om die volle sosio-ekonomiese impak van hoëronderwysinstellings te omvat. Die raamwerk wat voortspruit, artikuleer die sosiale en ekonomiese uitwerking wat hoëronderwysinstellings na 'n gemeenskap bring deur elk 'n ekwivalente gewig te gee. Verder het die 2012-2013 data aangetoon dat die Universiteit Stellenbosch 'n betekenisvolle sosiale en ekonomiese impak op die omliggende munisipaliteite van Stellenbosch en Drakenstein het. Die bevindinge sluit 'n bykomende lys sosiale en ekonomiese prestasie-aanduiders in wat verwant is aan die universiteit se pogings tot gemeenskapsinteraksie en ekonomiese ontwikkeling.

SLEUTELWOORDE: Gemeenskapsinteraksie, Ekonomiese Ontwikkeling, Ekonomiese Impakstudies, Hoër Onderwys, Hoëronderwysinstellings, Menskapitaal, Kennisgebaseerde Ekonomie, Universiteit-gemeenskap Interaksie-ooreenkomste.

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List of Abbreviations Used

ACHE	American Council on Higher Education
APLGU	Association of Public Land Grant Universities
BEA	Bureau of Economic Analysis
CE	Community Engagement
CFAT	Carnegie Foundation for the Advancement of Teaching
CHE	Council for Higher Education
CHESP	Community-Higher Education-Service Partnerships
CHET	Centre for Higher Education Transformation
DESC	Departmental Ethics Screening Committee
GDP	Gross Domestic Product
HC	Human Capital
HE	Higher Education
HEI	Higher Education Institution
HEQC	Higher Education Quality Committee
IDP	Integrated Development Plan
KBE	Knowledge-based Economy
LISP	Local Innovations System Project
MIT	Massachusetts Institute of Technology
MOU	Memorandum of Understanding
NCHE	National Commission on Higher Education
NPHE	National Plan for Higher Education
OECD	Organization for Economic Co-operation and Development
PPF	Production Possibility Frontier
SAHECEF	South African Higher Education Community Engagement Forum

SU Stellenbosch University

UNESCO United Nations Educational, Scientific, and Cultural Organization

Chapter 1 Introduction

1.1. Research Question, Aim and Objectives

This research study is designed to measure the impact of Stellenbosch University's interaction agreements with the local surrounding communities. This research could potentially highlight strengths regarding the current local public policy practices of Stellenbosch University's interaction with the surrounding community.

Central Research Question

What is the impact of Stellenbosch University community interaction agreements with the Stellenbosch and Drakenstein municipalities on local development?

Subsidiary Research Questions

- I. What are the perceptions of the social and economic impact of the community interaction agreements by municipal and university administrators?
- II. What are the social impacts of the community interaction agreements by analysis of the community interaction project database and through project leaders that are actively involved in community interaction programs?
- III. What is the economic impact of the Stellenbosch University interaction agreements in the Stellenbosch and Drakenstein municipalities?

Aim of the Research

The purpose of this research is to understand the relationship between Stellenbosch University and local development by measuring the impact of the university's community interaction agreements with the Stellenbosch and Drakenstein municipalities. By measuring the impact of the university's community interaction agreements, the researcher aims to produce study results and draw quality research conclusions that can contribute to new knowledge-generation within the field. As Kaplan and Norton suggest, the use of measurement can assist in translating complex and frequently nebulous concepts into a more precise form (Kaplan and Norton, 1996). Furthermore, this research sought to address the numerous conceptual issues surrounding higher education strategic partnerships. The conceptual issues include the definition of community

engagement as well as reciprocity and mutual benefit concerns between higher education institutions and the community. By seeking to better understand this complex relationship, this research could lead to a best practices policy framework for universities in South Africa and internationally; this is discussed further in section 1.4.

Research Objectives

- I. Investigate the impact of the local university interaction agreements in Stellenbosch and Drakenstein through perceptions of municipal and university administrators.
- II. Examine the social impacts of the university interaction agreements through the university's community interaction database of projects and through the project leaders actively involved in university interaction programs.
- III. Measure the identified university interaction agreements with an economic impact study in the geographic areas of the Stellenbosch and Drakenstein municipalities.

1.2. Significance of the Study

This research may highlight strengths regarding the current local public policy practices of Stellenbosch University's interaction with the surrounding community. On the other hand, the research may illustrate potential deficiencies that need to be addressed to improve the individual and organizational performance in terms of community interaction.

Within a South African context, the study could further the development of social and economic performance indicators for the King III report regarding corporate governance guidelines. The King III report builds on prior versions to integrate the financial results and includes long term sustainability which takes into consideration impacts on the surrounding communities (The Institute of Directors in Southern Africa, 2009). As a result, more research is needed as higher education institutions including Stellenbosch University work to develop metrics to respond to the King III integrated reporting requirements.

Additionally, the recent South African National Development Plan 2030 points out that universities are vital to the development of the nation (National Planning Commission,

2012). The development plan details how universities should contribute through three main functions in society, including education and training for employment, new knowledge production, and offer an opportunity for social mobility against the backdrop of the country's past (National Planning Commission, 2012). As a result, universities in South Africa should respond with performance indicators and metrics for how they are responding to the functions outlined in the development plan.

Furthermore, this research could identify a best practices policy framework for universities in South Africa and internationally to engage local communities in addressing social and economic issues. There is currently a scarcity in the literature related to the impact of universities on the regional and local level. Much of the existing literature is concerned with university interaction and policy development at the national level. To the author's knowledge, there is no published literature regarding the impact of interaction agreements with higher education institutions on the surrounding regional and local communities in South Africa. It is anticipated that this research will contribute to new knowledge creation regarding these interactions agreements.

1.3. Personal and Professional Background

A researcher's personal experiences guide their professional development and many times their research perspective. As a result, it is important to share more about my personal and professional experiences that have led me to this research study.

Growing up in rural northeast corner of Texas in the USA, from an early age, I was intrigued with how communities develop and prosper. After graduating secondary school, I attended the University of Arkansas, J. William Fulbright College of Arts and Sciences located in Fayetteville, Arkansas and eventually completed a Masters of Public Administration with a concentration in economic development and higher education. It was during my masters' coursework that I worked as a research assistant for the Center for Business and Economic Research. During my time at the center, I worked on numerous economic feasibility studies for regional and local municipal government agencies. It was during this time that we also began work on an economic impact study for the University of Arkansas to measure the impact the university had on the surrounding community. Through this experience, I learned valuable insight and best practices from other universities undertaking similar studies.

After graduation, I spent six years working in municipal government and developed practical experience regarding community planning and economic development. In 2012, I was given the opportunity through the Rotary International Ambassadorial Scholar Program to travel abroad and study any topic imaginable. However, for me the answer was simple, and that was to further study higher education institutions social and economic impact on surrounding communities. This interest led me to Stellenbosch University and to study the impact of the established community interaction agreements with local municipalities. Although there is much to learn, it is my sincere hope through this research effort that new knowledge will be generated regarding the impact of Stellenbosch University community interaction agreements on local development.

1.4. Study Framework

The following is a brief synopsis of each chapter contained within this research study. The purpose of this section is to provide the reader with a summary of the topics discussed along with the results presented in each section.

In chapter 1, the researcher introduces a general research overview and gives a brief background of the study within the South African context. The introduction also includes a description of the research question and study purpose. This chapter details the study's significance, which is important in order to orientate the reader to goal of new knowledge creation for the study. In addition, a brief overview of the research methodology, clarification of key concepts, and a study framework were also described in detail.

Chapter 2 explores the research question and contains an overview of the existing literature involving university and community interaction agreements. This includes the history of higher education policy analysis followed by an examination of the definition, theoretical approach and evaluative criteria used. Moreover, this section includes higher education policy analysis within the South African context followed by a critical analysis section. The next part of the chapter explores the extensive literature regarding higher education and community engagement. The section begins with a definition and investigation of conceptual issues followed by a typology of community engagement. Next, the section explores the relationship between South African high education

institutions and community engagement followed by a critical analysis of community engagement.

The literature review section that follows explores higher education and economic development. In addition to higher education and economic development literature, the section also examines the relationship of higher education institutions and local economic development. The piece also includes existing literature related to a knowledge-based economy, human capital development and a critical look at the relationship between higher education and economic development. The final section reviews the existing literature involving higher education economic impact studies which included a history overview and the basic study format used. Additionally, an examination of the methodological approaches in higher education impact studies as well as a critical analysis of the existing studies is discussed.

Chapter 3 focuses on the research design and methodology used in the empirical portion of the study. The research questions, aims and objectives are noted in this section along with an outline of the study design. Moreover, the research paradigm, integrated methodologies or FraIM approach, and procedural plan were also discussed in this section. This section also included a detailed description of each research phase along with data analysis, addressing validity concerns and ethical considerations.

The study implementation and results in chapter 4 details the outcomes of the university and community interaction agreements analysis, Stellenbosch University's social impact analysis and economic impact analysis. The community interaction agreement analysis includes an overview of participants, questionnaires, artifact analysis, questionnaire analysis and concludes with an interpretational analysis. The social impact analysis also includes an outline of participants, questionnaires, database and source documents, a narrative analysis, a numerical analysis and finally an interpretational analysis. Similarly, the economic impact analysis includes participants, development of human capital, advancement of entrepreneurship, technology transfer and innovation and contributions to the local economy.

The discussion of the findings in chapter 5 contains an explanation of the results including the results in agreement with what the researcher expected and those that were different from original expectations. The chapter comprises an introduction, study

overview and the main findings regarding the community interaction agreements, social impact and economic impact.

The final conclusions and recommendations for future research will be discussed in chapter 7 which will include closing thoughts, limitations of the study and comments regarding future research.

Chapter 2 Literature Review

2.1. Introduction

Governments at every level have a basic duty to define the expectations of higher education, which should be achieved through a process of public deliberation and affirmation (Hay & Monnapula-Mapesela, 2009). Through a coordinated public policy approach, higher education institutions could create a climate that is conducive to development through initiatives that create strategic partnerships between the private and public sectors (Hay & Monnapula-Mapesela, 2009). This chapter holistically examines the impact of Stellenbosch University's interaction agreements by reviewing academic literature related to higher education policy analysis, higher education community engagement, higher education economic development, and finally higher education economic impact studies.

This chapter also provides conceptualization of higher education policy analysis through Stellenbosch University's community interaction agreements. This is followed by an examination of the academic literature related to higher education's relationship to community engagement and economic development. The final topic relates to how impact studies are traditionally conducted and gives insight into emerging methodologies. Additionally, special attention is given to critical analysis from a higher education perspective discussed throughout the literature at the end of each section. The critical analysis section seeks to move beyond a summary of the existing research and to offer interpretations from the researcher's perspective. Furthermore, the critical analysis section helps to organize the existing research into understandable patterns and evaluate the literature for use later in the study.

2.2. Higher Education Policy Analysis

“It has been said that democracy is the worst form of government except all the others that have been tried.” – Sir Winston Churchill

Stellenbosch University's community interaction agreements form the basis for this research study. As a result, the research question, aim and objectives all directly relate to

measuring the impact of these agreements. Before analyzing Stellenbosch University's community interaction agreements, this section begins by reviewing the history of policy analysis and exploring the practical evaluative criteria used in policy analysis. In addition, this section offers an overview of South African higher education documents and a critical analysis of South African higher education policy.

2.2.1. Definition, Theoretical Approach and Evaluative Criteria

According to Michael Kraft, policy analysis, simply put, is described as the investigation of the various public policy components, the process, or both (Kraft, 2010). Additionally according to Bellinger, policy analysis involves a rational investigation by weighing the costs and benefits of a public or private decision (Bellinger, 2007). Policy analysis can also include the study of the causes and consequences of policy decisions (Kraft, 2010). Since one of higher education's supreme benefits is serving the greater good, policy analysis is a valuable method to examine the process of policy development and implementation in higher education worldwide and in South Africa (Hay & Monnapula-Mapesela, 2009).

The theoretical approach for this study was grounded in evaluative policy analysis which has its roots in the works of Aristotle, Montesquieu and Machiavelli (Hay & Monnapula-Mapesela, 2009). In evaluative policy analysis, the overall aim is to evaluate the appropriateness of the policy rationale, goals, and process with the point of departure being the close examination of the policy objectives and purpose (Van der Knaap, 2004). Since higher education is a unique interdisciplinary field of study, it poses challenges regarding methods and evaluative criteria (Hay & Monnapula-Mapesela, 2009).

As a result, the researcher must be aware not to choose one method or criteria as absolute while at the same time guarding against maintaining validity by not using non-academically accepted approaches. To avoid these potential pitfalls, it is essential to define the specific evaluative criteria or the policy objectives that will be used to determine the merits of existing agreements. In most cases, because higher education institutions are partially publically funded, the primary objective for policy analysis is to apply basic economic theories that can be utilized to assess alternate public policies (Bellinger, 2007). According to Kraft, the three most common types of policy objectives

that are the target of public policy investigations are effectiveness, efficiency, and equity (Kraft, 2010).

Effectiveness is universally important to all policy proposals (Kraft, 2010). Stated in another way, effectiveness relates to whether the indicated goals and objectives are being met. Political practicality, as Bellinger points out, is also a function of effectiveness regarding how much political support for a policy there is and its ability to withstand judicial review (Bellinger, 2007). For existing and proposed policies alike, to measure effectiveness it is important to determine quantifiable indicators for the objectives.

However, one common obstacle occurs when programs have multiple goals and objectives where some succeed and others fail (Weimer & Vining, 2005). Another critique brought forth by Weimer and Vining is that the policy objectives have variable lengths, with some having short-term outcomes while others have long-term outcomes often complicating objective measurement (Weimer & Vining, 2005). However, a further limitation involves future estimates as to whether a new policy proposal will be more effective than the current policy in place (Bellinger, 2007). Many times, this limitation is exacerbated by politicians who often overstate the flaws of existing programs, only to flaunt the merits of alternative policy proposals based primarily on ideological beliefs rather than evidence of an alternative program's effectiveness (Kraft, 2010).

An additional universally important objective is policy efficiency. These are often measured through a cost-benefit analysis, a risk assessment, and an impact assessment. According to Kraft, efficiency is a means to justifying government action on the foundation of economic theories (Kraft, 2010). From an economic theory perspective, limited fiscal resources must be used to provide the greatest level of well-being for a society (Weimer & Vining, 2005). At the same time, one should also note that in theory, the more fiscal resources spent by a government on one activity, the less will be available for other services (Bellinger, 2007). Economists reason that when the costs of the program exceed the benefits, it deprives society of value by forgoing the possible alternative uses of the labor, capital, and materials it takes to meet the original objectives (Weimer & Vining, 2005). Critics often point to how one logically calculates the societal benefits to accurately weigh against the known costs of the policy especially when non-monetary values are included on both sides (Bellinger, 2007). Although challenging,

economists have developed a number of methods to calculate costs and benefits both quantitatively and qualitatively (Kraft, 2010). For the purposes of this study, the research uses an impact assessment which is described in further detail in the methodology section in chapter 3.

The final politically important evaluative tool is equity, which typically involves the pursuit of policy objectives aimed at treatment standards, income equality, and freedom (Bellinger, 2007). According to Kraft, the word has two different meanings in terms of process equity and outcomes equity. Process equity refers to how voluntary, fair and open the decision making process was regarding the creation of the policy (Kraft, 2010). Outcomes equity examines the results and ultimately, if because of the policy, some citizens fare better than others regarding education, employment income, housing, and so on (Kraft, 2010). Outcomes equity also involves discussions of ethical theories related to policy objectives. Since there is a lack of a generally accepted ethical paradigm related to policy analysis, ethical theories will not be explored in this study (Bellinger, 2007).

2.2.2. South African Higher Education Policy & Analysis

South Africa's history and present higher education policies provide perspectives and background to the complexities, reasoning, and political powers behind policy development and implementation (Hay & Monnapula-Mapesela, 2009). The history of South African higher education policy can be divided between pre-1994 when policies were primarily aimed at advancing white South Africans and post-1994 when the new democratic government under Nelson Mandela was installed. In South Africa, apartheid's higher education legacy left the country with a highly contested and segregated system consisting of historically white, black, Indian and colored universities (Hay & Monnapula-Mapesela, 2009). However, after 1994, higher education experienced an extraordinary amount of new policy documents, workshops, conferences, papers, and publications (Bitzer & Wilkinson, 2009). According to Le Grange, multiple policy processes were put in place during this period that was aimed at transforming higher education (Le Grange, 2009). In fact, over thirty South African higher education policy initiatives have been circulated since 1994 (Hay & Monnapula-Mapesela, 2009).

Many of the policies were developed by the newly appointed National Commission on Higher Education (NCHE). These transformative policies targeted higher education

institutions (HEIs) under the old apartheid government. The NCHE identified three theoretical pillars to accomplish the higher education transformation agenda in South Africa. The first pillar included the democratization and increased participation of interest groups aimed at eradicating the inequalities of the past throughout higher education (National Commission on Higher Education, 1996). The second was greater responsiveness through the ability and willingness to respond to a number of social and economic needs in order to find solutions which require the reworking of teaching, learning, and existing curricula (National Commission on Higher Education, 1996). The third pillar encouraged increased cooperation and partnerships between higher education and all sectors of society to build mutual trust and increase accountability and transparency within the higher education sector (National Commission on Higher Education, 1996).

As a direct result of the NCHE's efforts, the Higher Education Act of 1997 was formulated, followed by the Education White Paper 3: *A Programme for the Transformation of Higher Education* which introduced a national framework for higher education in South Africa (CHE, 2004). The White Paper 3 stated that higher education institutions should play an important role in the cultural, social, and economic growth of South African society (CHE, 2004). Furthermore, it emphasized the challenges in the South African context to "address past inequalities and transform the existing higher education system to help serve a new social order, meet national needs, and respond to new opportunities" (CHE, 2004). In addition, the White Paper 3 set out broad national goals that included stabilizing the existing higher education system, improving efficiency, encouraging regional cooperation, improving student and staff equity, developing planning capacity, enhancing quality, and promoting research development (Hay & Monnapula-Mapesela, 2009). To achieve the overall goals of the Education White Paper 3, a series of three year rolling plans were developed to ensure targets would be met. For example, to stabilize the higher education system and to improve efficiency, the existing 36 higher education institutions were merged into 23 (Hay & Monnapula-Mapesela, 2009).

The work of the Higher Education Act of 1997 and the White Paper 3 led to the National Plan for Higher Education (NPHE) that formally provided a framework and process for the South African higher education system restructuring. The framework in the NPHE

outlined implementation steps and required interventions in order to complete the transformation of the higher education system (Ministry of Education, 2001). According to the Ministry of Education, the document was designed to be more than simply a paper exercise by including a list of achievable goals with corresponding deadlines (Ministry of Education, 2001). Finally, throughout the document, there is a continued call for all constituencies of higher education to support and implement the NPHE as a way forward for South African higher education (Ministry of Education, 2001). Beyond the NPHE, recent revisions such as the Higher Education Amendment Act of 2008 have sought to implement curriculum reform through the South African Higher Education Qualifications Framework (HEQF) (Bitzer, Eli & Wilkinson, A., 2009). As a result, higher education institutions have been altered from an apartheid era, exclusive knowledge production model, to a new model focusing on teaching, learning, research, and community engagement (Barnett, 2012). More recently, as noted in the 2013 White Paper for Post-School Education and Training, higher education institutions will be an integral part of the government's policies to further develop South Africa and to improve the economic, social and cultural life of its people (Department of Higher Education & Training, 2013).

2.2.3. Critical Analysis of South African Higher Education Policy

In order to analyze South African higher education properly, Cloete (2006) stresses the importance of considering the relationship concerning policy intentions and outcomes due to the shared connection with education and economic reform agendas. Shortly after South Africa's first democratic election, President Nelson Mandela appointed a National Commission on Higher Education (NCHE) to protect what was considered valuable and to address issues considered to be defective and requiring transformation (Cloete, 2006). As a result in South Africa, there is constant tension to meet national higher education objectives such as reparation, democratization, and equality while balancing global higher education transformation pressures of efficiency, effectiveness, and responsiveness (Cloete, 2006). The "dual pressures" placed on the South African higher education system are referenced throughout the literature and researchers point to this phenomenon as one of the barriers to policy implementation.

Another barrier includes the presence of a strong democratic participatory process in South Africa which has led to the slow progress in implementation and analysis of the proposed policies (Mapesela & Hay, 2005). One universal reason for the delays in

implementation is that many public policies are aimed at producing a modification in behavior from stakeholders that are often resistant to change (Kraft, 2010). As a result in South Africa, certain stakeholders deny their role in policy issues due to misconceptions or fear that results in resistance to transformation (Hay & Monnapula-Mapesela, 2009). Consequently, this often leads to engagement in confusing, petty debates about what matters and what does not matter, which unfortunately shifts the focus away from the real purpose of the policy (Hay & Monnapula-Mapesela, 2009).

The delays also correspond to the complex realities of higher education policy practices that are still observable in post-apartheid South Africa (Cloete, 2006). As noted in the recent South African National Development Plan 2030, universities are vital to the development of a nation (National Planning Commission, 2012). The plan includes how universities contribute through three main functions in society including the education and training for employment, new knowledge production and offer an opportunity for social mobility against the backdrop of the country's past (National Planning Commission, 2012). However, the South African economy is continuing to transform alongside higher education from a traditional manufacturing base to a knowledge-based society. As a consequence, the plan also references the severe shortcomings in higher education quality as evidenced by the low conversion rate of graduates to professional employment. The plan continues by categorizing institutions of higher education in South African as mediocre regarding knowledge producers, plagued by high attrition, low participation and inadequate ability to produce the necessary high level skills in the evolving economy (National Planning Commission, 2012).

As a result, the structural economic changes and delays have led policy analysts to engage in policy analysis even before the implementation is complete and thus yielding incomplete results (Mapesela & Hay, 2005). Regardless of the reasons behind lagging policy implementation, effective structures for monitoring and analyzing higher education policy are still rare in South Africa (Hay & Monnapula-Mapesela, 2009). Thus, there is also a need for critical examination of South African higher education policy analysis by higher education practitioners and academics alike in order to influence future policy development. The effects of higher education policies can no longer be understood by simply focusing on public policy at the national level (Cloete, 2006). In addition, it was assumed that the policy process was a casual, linear progression that comprised

various phases that could separately be observed (Cloete, 2006). However, according to Cloete, theoretic and practical discontentment has slowly led to the acknowledgment that the higher education policy process should be more collaborative than in the past (Cloete, 2006).

Bellinger (2007) agrees that the public policy process should be an interactive practice involving multiple differences between various stakeholders and constituents. Unfortunately in South Africa, these differences and delays have been understood as implementation failure (Cloete, 2006). However, Cloete (2006) cautions against superficial judgment and contends that although there is room for improvement, even an improved policy implementation cannot assure a model result. Cloete (2006) instead calls for learning from the unintended effects of policy implementation to determine what works and what does not. Furthermore, all stakeholders including higher education institutions or government agencies should recognize the unintended consequences of the policy proposals and use the insight gained to develop future higher education policy (Cloete, 2006).

2.3. Higher Education Social Impact

"Partnerships are the currency of engagement – the medium of exchange between university and community, and the measurement of an institution's level of commitment to working collaboratively" (Brukaradt, Holland, Percy, & Zimpher, 2004).

Universities, politicians, and education critics alike are increasingly seeking more ways for higher education to become more relevant and to offer knowledge on social, cultural and economic problems (Bender & Bender, 2008). As a result, the concept of community engagement has emerged throughout the literature as a potential solution. In the USA, Ernest Boyer's landmark special report titled *Scholarship Reconsidered: Priorities of the Professoriate*, introduced the concept of the scholarship of community engagement by urging higher education institutions and academics to embrace their societal responsibilities (Boyer, 1991). Boyer proposed a more holistic view of scholarship and the establishment of a reward system for faculty participating in community engagement (Boyer, 1991). Boyer as cited by Colburn Jr and Newmark (2007) acknowledged the conventional definition of scholarship as the discovery of new knowledge and argued for increasing the concept of scholarship beyond the original delineation. He proposed four general forms of scholarship including the discovery of new knowledge, integration of scholarship, application of knowledge and the scholarship of teaching referring to them collectively as the scholarship of engagement (Boyer, 1996). Furthermore, with the help of the Carnegie Foundation's unveiling of a new classification for higher education institutions that engage publically, community engagement is slowly being recognized as the university's third mission combined with teaching and research (Driscoll, 2009).

In South Africa, the term community engagement was a comparatively unknown concept until responses to the White Paper on Higher Education Transformation in 1997 (Lazarus, Erasmus, Hendricks, Nduna, & Slamati, 2008). The responses led to the launch of the Community - Higher Education - Service Partnerships (CHESP) initiative in 1999 led by the Joint Education Trust, Ford Foundation and Kellogg Foundation that was designed to provide conceptualization and a framework for community engagement (Garlick & Langworthy, 2004). In addition, the target of the initiative was to contribute to the rebuilding and advancement of South African civil society by encouraging socially responsible models of higher education (Garlick & Langworthy, 2004). Since that time,

community engagement has been embedded in various national higher education transformation policy documents (Lazarus et al., 2008). This section offers an overview of community engagement with emphasis placed on defining the term and conceptual issues, forms of engagement, and integration models into teaching and learning.

2.3.1. Community Engagement (CE) Definition & Conceptual Issues

According to Driscoll, community engagement is defined as “the collaboration between higher education institutions and their larger communities (local, regional, state, national global) for the mutually beneficial exchange of knowledge and resources in a context of partnership and reciprocity” (Driscoll, 2009, p.9). In the USA, this definition is also used by the Carnegie Foundation for the Advancement of Teaching (CFAT) to represent the broad context of community as well as emphasizing the reciprocity that should occur between the university and the community (Weerts & Sandmann, 2010). Community engagement has gained momentum over the past several years due to multiple influences stemming from the Carnegie Foundation’s introduction of the new classification system (Weerts & Sandmann, 2010) .

However, one conceptual issue emphasized is that not all higher education institutions’ definitions of communities and community engagement are the same (Driscoll, 2009). In response to new Carnegie classification system, seventy six institutions submitted applications and supporting documentation to be initially qualified as institutions of community engagement (Driscoll, 2009). However, some institutions such as North Carolina State University introduced documentation unlike Carnegie’s geographical concept to include “identifiable groups of individuals that share similar interests, concerns and educational needs around a subject matter area” (Driscoll, 2009, 6). Furthermore, responses to engagement ranged from including information on curriculum engagement to other institutions documenting only outreach and partnerships (Driscoll, 2009).

Another conceptual issue surrounding the definition of community engagement is the emphasis of reciprocity between the higher education institution and the community. According to Driscoll, when the previously discussed institutions were asked to show how they maintained reciprocity and received responses, most institutions could only describe in ambiguous terms how that was achieved (Driscoll, 2009). Community

engagement, as the Carnegie definition recommends, varies from the traditional understanding of outreach and public service as one-way approaches to the community (Weerts & Sandmann, 2010). Unfortunately, within the higher education context, universities typically dominate the research agenda and impacts are often measured with a university bias (Albertyn & Daniels, 2009). Engagement should be considered a two-way approach that emphasizes collaboration between higher education institutions and the community to address societal needs (Weerts & Sandmann, 2010). Positioned in another way, as described by the South African Council on Education, community engagement infers less of a paternalistic role from institutions and more of a reciprocal relationship between the institution and the community (CHE, 2004).

2.3.2. Typology of Community Engagement

Within the context of higher education, there are various forms of community engagement that involves students are related on some level to the integration of service with traditional university teaching and research activities (Lazarus et al., 2008). According to Bringle, engagement in a university setting should be the nexus between the community, teaching, research, and service as illustrated in the community engagement model in figure 2.1 (Bringle & Hatcher, 2007).

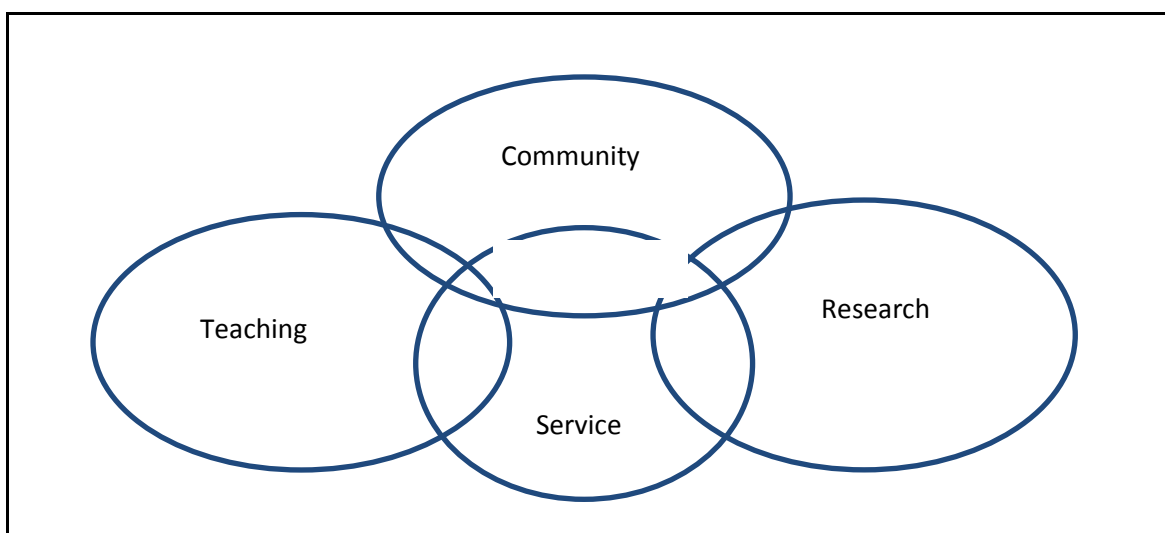


Figure 2.1 Community engagement intersecting model

Source: Adapted from Bringle & Hatcher (2007).

The various types of community engagement range from internships, volunteerism, field education or cooperative education as it is known in the South African context,

community outreach and service learning. However, it is possible to differentiate between various forms of community engagement. According to Furco, the two key principles to apply to all community engagement activities are the intended beneficiaries and the primary intended purpose. In the following sections, each stage of Furco's service learning continuum and the various types of community engagement that involves students will be examined closer.

2.3.2.1. Internships

According to Furco's continuum, internships are at the far end of one side of the spectrum. The objective of internships is to "provide opportunities designed to equip students with practical, real-world work experiences that will help them transition into a successful career" (Furco, 1996, 2). Many times, internships are typically designed to assist students in obtaining hands on training within their chosen field. In addition, internships typically involve paid or unpaid time at the student's discretion normally during their junior or senior year (Callanan & Benzing, 2004). The primary beneficiary is, typically, the student although depending on the structure of the program, some internships can have a community component as well (Furco, 1996). From an employer's point of view, internships may assist the organization to attract, grow and retain innovative people within a given profession. From a higher education point of view, internships can be incorporated into the curriculum to include learning objectives and outcomes.

2.3.2.2. Volunteerism

If internships are at one far end of the service learning continuum, then volunteering is at the other end of the spectrum (Furco, 1996). According to Wilson (2000), volunteering can be defined as activities in which time is given freely to the benefit of another person, cause or group which involves more commitment than unplanned assistance but narrower in scope than care provided to friends and family. The objective of volunteering is, primarily, to provide a service to the community. An example of volunteerism is students who visit nursing homes to spend time with the residents. In this case, the primary beneficiary is the individual or community being visited and typically not the student. Although the student may receive some benefit such as a feeling of personal reward, in this case, the outcomes are unintentional by-products of the interaction (Furco, 1996). As

a result, many volunteer programs and activities are altruistic in nature and typically occur as extra-curricular activities outside the immediate scope of the university.

2.3.2.3. Field or Cooperative Education

Field or Cooperative education, as referred to in the South African context, is similar to internships in that the main purpose or objective is learning by the student. According to Furco, the primary objective of cooperative education is to enhance students' understanding of their field and provide opportunities within their chosen field (Furco, 1996). However, cooperative education differs from internships in that normally the student alternates between paid full-time employment and full-time academic work (Callanan & Benzing, 2004). Typically, field education plays a central part in many service learning professional programs such as public health, social welfare and education (Furco, 1996). In some service oriented professional programs, students may spend up to two years providing a service to a school, social service program or health agency. As a result of this long term commitment, students often do spend time in reflection on how their service benefits others. However, in most field education or cooperative education programs, the main objective is still related to the student's learning outcomes and their overall programmatic experience (Furco, 1996).

2.3.2.4. Community Service or Outreach

Similar to volunteerism, the main goal for community service or outreach as referred to in the South African context, is to provide a service to an individual recipient or the community. The principal objective of community outreach is service to the community usually initiated by the department, faculty or overall university (Furco, 1996). Studies have shown that students' involvement in community service activities improves their sensitivity to moral issues, enables them to study more about the source of the problem, and overcome negative barriers to deal with the issue (Boss, 1994). In addition, Boss concluded that community service activities have benefits over simulated classroom experiences because it places students in direct contact with the community's moral and ethical issues (Boss, 1994). However, the primary reason for becoming involved is still to advance a cause (Furco, 1996). Some community outreach programs are similar to service learning in that academic credit is sometimes awarded. However, community outreach usually develops as part of a program or initiative rather than an integrated part of an existing curriculum.

2.3.2.5. Service-Learning

The final component of Furco's (1996) continuum is the concept of service-learning that seeks to strike a balance between the primary purpose and beneficiaries. Service-Learning is defined in South Africa by the Joint Education Trust (JET) as a "thoughtfully organized and reflective service-oriented pedagogy focused on the development priorities of communities through the interaction between and application of knowledge, skills and experiences in partnership between the community, academics, students and service providers within the community for the benefit of all participants" (Bringle & Hatcher, 2007, 82). Different from field or cooperative education which is typically performed in addition to the normal coursework, service-learning programs fully integrate service into the course (Bringle & Hatcher, 2007). As a result, reciprocity is heavily emphasized in service-learning both from the community's needs and the students' needs (Bringle & Hatcher, 2007). By 2007, service-learning had become a major source of community engagement in South Africa as evidenced by Table 2.1.

Table 2.1 Service-learning courses by university from 2001-2007

University	CHESP/JET Courses	Students
Cape Peninsula Univ. of Technology	19	1355
Central University of Technology	19	317
Mangosuthu Technikon	4	300
Stellenbosch University	14	273
University of Cape Town	12	480
University of Johannesburg	5	542
University of KwaZulu Natal	47	1363
University of Pretoria	8	206
University of the Free State	49	2743
University of the Western Cape	29	636
University of Witwatersrand	28	600
Walter Sisulu University	22	858
Overall Count	256	9673

Source: (Lazarus et al., 2008)

Service-learning is also designed towards student development and often seen as a scholarly activity by encouraging student development through opportunities that meet learning objectives and outcomes (Bringle & Hatcher, 2007). In addition, several studies have shown that service-learning is a way to improve classroom teaching through opportunities for experiential learning (Anderson, Swick, & Yff, 2001). According to Krause, service-learning programs in South Africa should contain a reflective component where students are allowed to make meaning of the service experience and to extend their formal learning (Krause, 2007). In the South African context, Bender (Bender & Bender, 2008) maintains that only service learning meets the criteria for community engaged teaching and learning at higher education institutions.

2.3.3. South African Higher Education Institutions and Community Engagement

As previously mentioned in the introduction to section 2.3, community engagement was a relatively unknown concept until responses to the White Paper on Higher Education Transformation in 1997, which led to the launch of the Community Higher Education Service Partnerships (CHESP) initiative in 1999 (Lazarus et al., 2008). CHESP was an agency contracted by the Joint Educational Trust (JET) and funded through the Kellogg Foundation to facilitate community engagement research at South African universities (Colburn Jr & Newmark, 2007). The specific operational objectives of CHESP were to develop community engagement pilot programs, monitor and evaluate the programs, and to use the results produced to inform higher education policy and practices (Lin, 2009). In addition, CHESP launched five complimentary programmes to meet the operational objectives including grant-making, capacity building, a monitoring and evaluation research program, advocacy, and a resource and information service (Lin, 2009).

In 2007, an external audit was conducted to determine the impact of the CHESP initiative on the national, institutional and programmatic level. The results indicated that the initiative made a substantial contribution to entrenching community engagement in South African higher education institutions (Lazarus et al., 2008). In fact, the audit reported the CHESP initiative enabled the implementation of 256 service learning courses in 39 academic disciplines involving 12 higher education institutions and almost 10,000 undergraduate and postgraduate students (Lazarus et al., 2008).

About the same time the CHESP initiative was launched, JET Education Services, formerly known as the Joint Education Trust, conducted a survey of South African universities regarding the use of policies or strategies to operationalize community service and found no institution had such policies or strategies (Lin, 2009). Consequently, the CHESP initiative assisted universities in developing strategies for operationalizing community engagement policies (Lazarus et al., 2008). As a result, many Higher Education Institutions (HEIs) have fully recognized the advantages of community engagement as evidenced by its inclusion into various university policies and programs (Lin, 2009).

In regards to the university-community partnerships, there have been several models developed to measure the engagement of institutions of higher education built on the framework of an engaged campus (Hollander, Saltmarsh, & Zlotkowski, 2002). One model developed by Hollander et al, identifies ten crucial indicators of community and civic engagement that specify how a university is creating the important basics for engagement (Hollander et al., 2002). Another model, developed by Garlick and Pryor, included a continuum based on six criteria to determine the degree in which universities

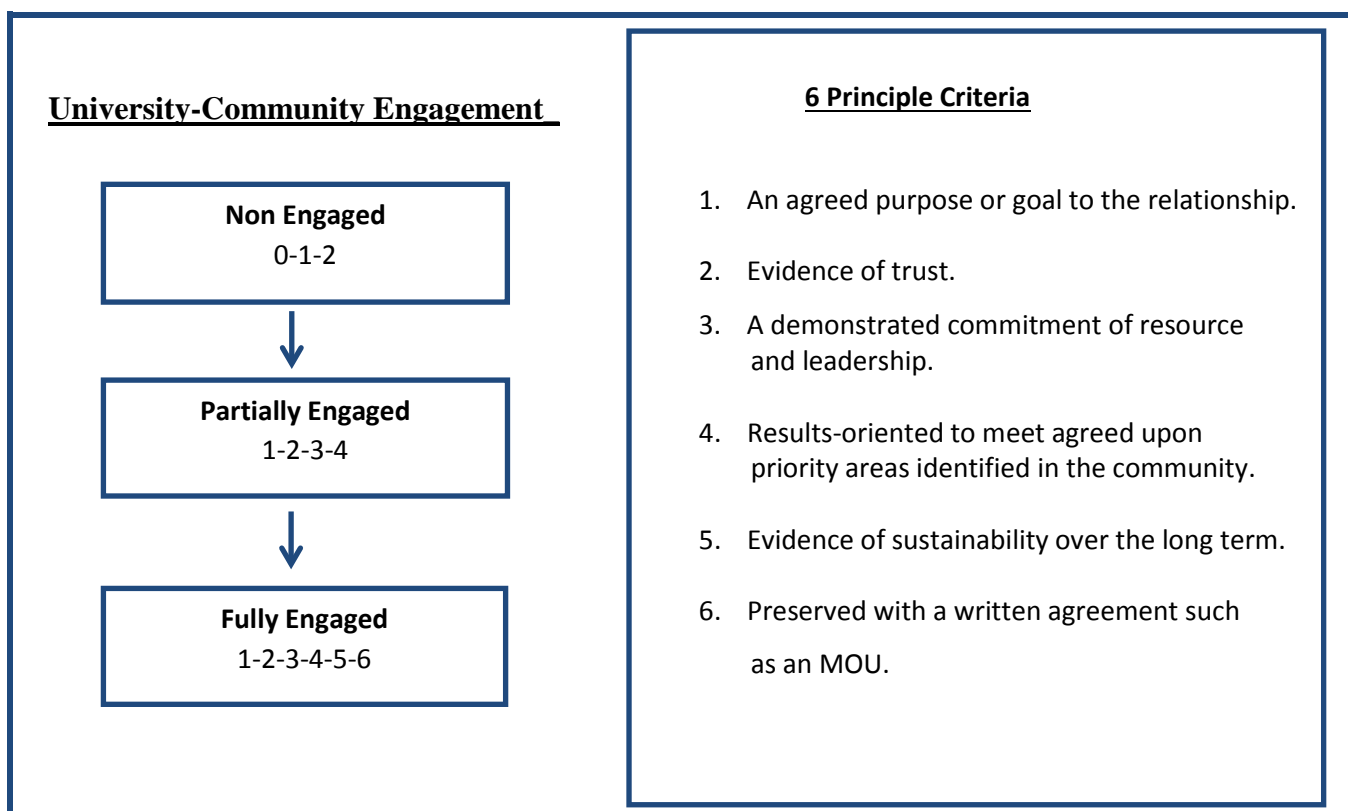


Figure 2.2 Continuum of university-community engagement adapted version

Source: (Garlick & Pryor, 2002)

are non-engaged, to partially engaged, to fully engaged (Garlick & Pryor, 2002). The criteria and scale of university engagement was modified in figure 2.2 above.

Adding to the impetus for universities to be “fully engaged” is the work done by Bourner and Millican that shows community engagement benefits for both higher education institutions and for students (Bourner & Millican, 2011). According to Bourner and Millican, institutional community engagement benefits students by broadening their

horizons through: increasing their awareness of the world, enhancing students' social self-efficacy, providing an opportunity for real world application, enhancing academic performance, developing leadership skills, and expanding their capacity for reflective thinking and learning which is an important component for lifelong learning (Bourner & Millican, 2011). Moreover, community engagement can offer knowledge, skills, and attitudes through properly structured frameworks to contribute to graduate employability (Bourner & Millican, 2011).

From a South African academic view, the scholarship of community engagement can help to develop the public features of academic scholarship (Albertyn & Daniels, 2009). Proponents also point out that community engagement can enhance study designs, methodologies and the dissemination of results (Brenner & Manice, 2011). Albertyn and Daniels call attention to the work of Barker (2004) who identified five core elements of engagement scholarship that sought to reduce the separation between expert academic specialists and the general public (Albertyn & Daniels, 2009), as displayed in Figure 2.3 below.

Five Core Elements of Engagement Scholarship

1. *Public Scholarship* – employs forums open to the community created through the process of public deliberation enabling greater comprehension of community problems and issues.
2. *Participatory Research* – stresses the dynamic role of society in engaging in the creation of knowledge, emphasizing and promoting participation and focusing on the marginalised or previously excluded groups.
3. *Community Partnerships* – focus on scholarly engagement practice aimed at bringing about social transformation.
4. *Public Information Networks* – the development of which identifies resources and assets in communities.
5. *Civic Skills/Literacy* – development through engagement in teaching, research, and outreach improves democratic processes, ensuring that disciplines supply the community with the knowledge required for reflective judgements on issues.

Figure 2.3 Barker's five core elements of engagement scholarship (Barker, 2004)

Many of Barker's (2004) five core elements overlap in terms of methodology and practical problem-solving applications. As Albertyn and Daniels argue, this calls for viewing through a different lens by identifying research problems within the community thereby contributing to social transformation, which narrows the gap between universities and the communities that they serve (Albertyn & Daniels, 2009). As a consequence, universities have a distinct opportunity to shape publically funded academic endeavours for the public good (Albertyn & Daniels, 2009). Supporters of community engagement also contend that in addition to improving academic content, it also includes cognitive benefits. Increased student motivation and the development of interpersonal skills are the most frequently cited cognitive benefits of community engagement (Brenner & Manice, 2011).

Furthermore, Singh argues the need for educational values in post-apartheid South Africa to move beyond human capital theory into creating cultural capital for different groups (Singh, 2005). Community engagement provides an avenue for university staff and students to become involved within their local communities which otherwise they may not have taken the opportunity to do so. According to Brenner, community engagement can also decrease historical mistrust among researchers and communities being studied (Brenner & Manice, 2011). It also offers higher education institutions the opportunity to showcase the engagement activities being done in local communities to receive recognition and capitalize on fundraising efforts. Furthermore, universities' commitment to community engagement and research must be of primary importance if South African higher education is to advance from good to great (Bender & Bender, 2008).

2.3.4. Critical Analysis of Community Engagement

Even though the concept of the scholarship of community engagement was introduced by Boyer over two decades ago, there is still much debate within the literature as to the appropriate role of community engagement within higher education institutions. Despite all the national planning documents and initiatives related to community engagement, in practice, there is still a perception that it is simply a philanthropic add-on (Bender & Bender, 2008). According to commentary by Hall for South Africa's Council for Higher Education (CHE) in 2010, community engagement remained "a marginal, uncoordinated necessity in South African Universities after more than a decade after the release of the Higher Education White Paper" (CHE, 2010, 7). In addition, much of the debate stems from what some perceive as a lack of clarity conceptually and the need for a better theorized understanding of the term community engagement (CHE, 2010). Unfortunately, this has led to opposition at some institutions to incorporating community engagement as a core pillar within the university (Bender & Bender, 2008). For a critical analysis perspective, this section will attempt to move beyond summarizing the existing research and to organize the research into understandable patterns and evaluate the literature.

In the South African context, the Community Engagement in Higher Education Conference held in Cape Town in 2006 was a ground-breaking moment for the community engagement movement in South Africa (Bender & Bender, 2008). One of the

major recommendations from the conference was the need for a conceptual framework or model for community engagement practices at higher education institutions (Higher Education Quality Committee/ JET Education Services South Africa, 2007). According to Bender, there are currently three major recognized models of community engagement at HEIs in South Africa: the silo model, the intersecting model and the infusion (cross-cutting) model (Bender & Bender, 2008). The silo model is similar to the silo model for organizational leadership in that people and activities operate in relative isolation of one another similar to traditional grain silos. Community engagement, in this context, is considered to be a philanthropic add-on to the existing institutional silos of teaching and research. It is also thought of in this model as subordinate to the traditional university core of teaching and learning and research as illustrated in figure 2.4 below.

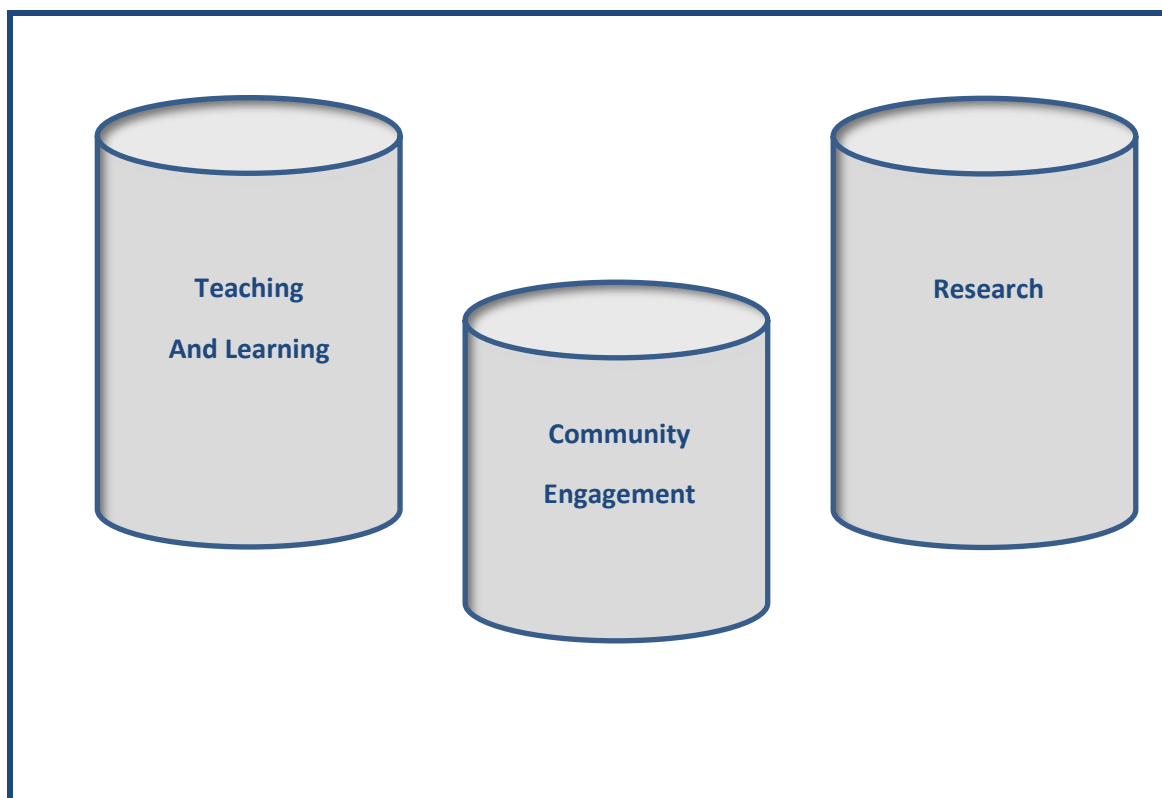


Figure 2.4 Silo model of community engagement (Adapted from Bender & Bender, 2008)

The next community engagement model is known as an intersecting model, developed by Bringle, and previously illustrated in Figure 2.1. This approach is characterized by the overlapping of the community, teaching, research and service with the nexus being community engagement. According to Bender, the intersecting model is framed as a

naturally occurring element of existing university activities (Bender & Bender, 2008). Furthermore, the conceptualization of this model assumes that ultimately all teaching, learning and research activities involve commitment to the surrounding community whether directly or indirectly (Bender & Bender, 2008). In addition, civic engagement in the intersecting model has no geographic boundaries and includes trans-disciplinary work by students and staff in all areas of society (Bringle & Hatcher, 2007). The point of differentiation and an important concept for all students, academics and administrators to recognize is that this approach does not require a drastic change in the existing core functions and activities of the university (Bender & Bender, 2008). In fact, it assumes that universities have always engaged with communities in countless ways through teaching, learning and research. This model simply operationalizes that engagement into the higher education institution.

The final community engagement model is considered the infusion (cross-cutting) model, also known as the community engaged university. According to Bender, this method favours community engagement as the main objective of higher education, and as a result maintains that it should be securely entrenched in all teaching, learning and research tasks (Bender & Bender, 2008). Consequently, community engagement is not seen as simply add-on philanthropic endeavours as illustrated in the silo model but it is incorporated in the institution's framework, policies and procedures. Promoters of this model contend that in order to improve the quality and relevance of a university's core activities, community engagement must be incorporated and supported throughout a university as illustrated in figure 2.5 below (Bender & Bender, 2008).

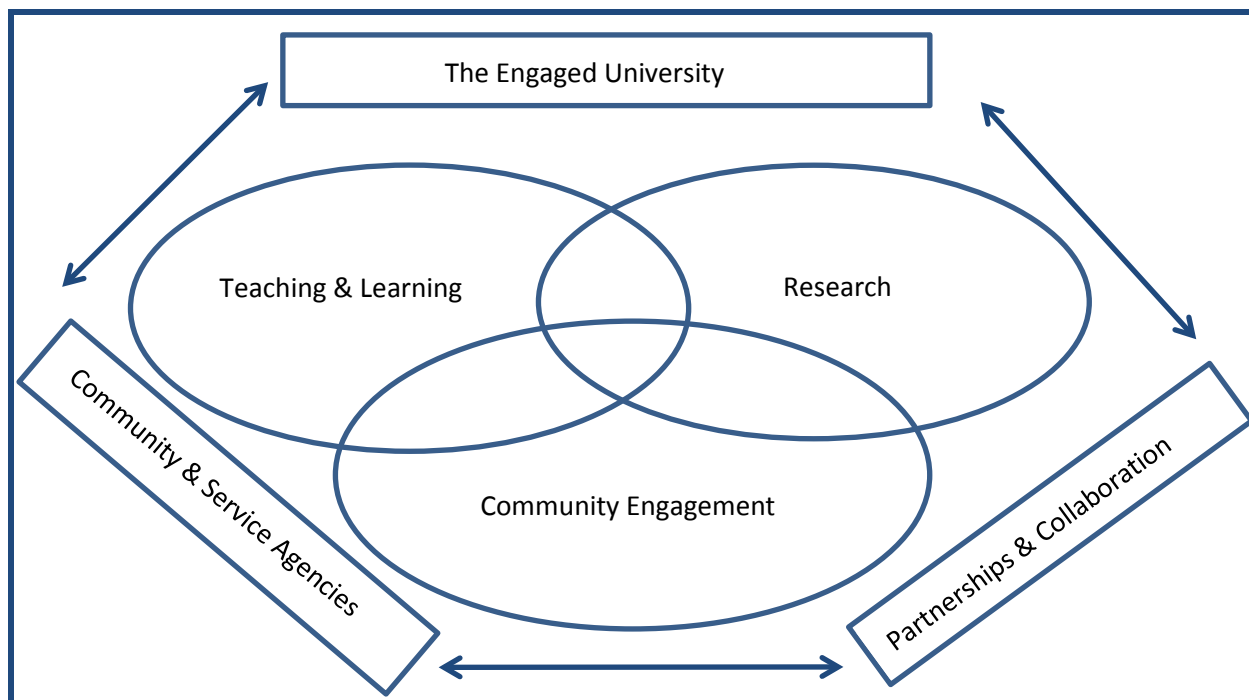


Figure 2.5 The engaged university model or infusion (cross-cutting) model (Adapted from Bender & Bender, 2008)

As all three models suggest, every university is in the business of community engagement in some form. In South Africa, there has been a documented shift towards the assimilation of community engagement models into the university core. However, community engagement is full of theoretical, epistemological and practical issues that make implementation challenging (Akpan, Minkley, & Thakrar, 2012). This brings up two salient points, according to Akpan, regarding higher education community engagement in South Africa. First, the knowledge-base of community engagement is unsystematic and as a result a number of incoherent practices have been introduced (Akpan et al., 2012). Second, the developmental implications of community engagement lend itself towards further research and understanding regarding university-community engagement (Akpan et al., 2012).

As a result of the JET-CHESP initiative coming to a close and the inherent issues of higher education community engagement, the South African Higher Education Community Engagement Forum (SAHECEF) was formed in 2009 with a total of twenty three public universities and one private university participating. It is important to note

that the national community engagement forum arose from a grassroots movement initiated by several practitioners within the South African higher education community. As a result, there have been multiple international conferences hosted by SAHECEF in an attempt to foster an understanding of how higher education institutions can conceptualize, develop practices and integrate community engagement into teaching, learning and research (Akpan et al., 2012). In addition to the work being done by SAHECEF, scholars such as Hall through Council on Higher Education (CHE) publications also suggest the promotion of research on the conceptualization of community engagement (CHE, 2010). In response to Hall's seminal work, Nongxa contends that academics should be involved in the conversations in addition to higher education administrators (CHE, 2010). In addition, Muller argues for a best practices approach by identifying successful engagement practices and constructing a typology (CHE, 2010). Furthermore, Slamet emphasizes the point of differentiation between higher education institutions contending for a framework that recognizes inherent institutional differences (CHE, 2010). Hall's work and the numerous responses underline the complexities involved with South African community engagement debate. Recently, in the 2013 White Paper for Post-School Education and Training, the complexities are highlighted in the section devoted to community engagement as it pertains to many different areas of university and academic work (Department of Higher Education & Training, 2013). It is also noted that community engagement in various forms which include socially responsive research, civil organization partnerships and formal academic learning programs has become part of the work of South African universities (Department of Higher Education & Training, 2013). Nonetheless, additional research regarding the epistemology, conceptualizations and practice of community engagement in South Africa is still needed before it is fully integrated into the core of most South African higher education institutions.

2.4. Higher Education Economic Impact

“Universities and colleges produce educated people that are more likely to earn higher wages and live longer. The most direct impacts include the economic activity associated with creation of local jobs and increases in local expenditures. More broadly, these impacts include the value of

intangibles like human capital and the value of local amenities provided by the university” (Ambargis, McComb, & Robbins, 2011).

The relationship between higher education and economic development is a highly debated topic throughout the literature. One view says that higher education investment plays a major role in economic growth and human capital development (D. E. Bloom et al., 2006). This view asserts that higher education is vital as an engine for the growth and development of an economy (Tilak, 2003). In addition, at its core, higher education assists economic growth through not only teaching and research, but also knowledge transfer (Tilak, 2003). An alternate view asserts that higher education may not be essential to economic development and growth (Vedder, 2004). It also maintains that investments in primary and secondary education have much higher returns especially in developing countries. This debate leads many researchers to one question: what is the impact of higher education on economic development?

2.4.1. Higher Education and Economic Development

Historically, the relationship between higher education and economic development has been assessed through the conventional rate of return model. The model examines the relationship between costs of education and the total lifetime earnings of an individual. Returns on investments in primary education are regarded as the highest followed by secondary education with higher education returns being the least (Psacharopoulos & Patrinos, 2004). As a result and as previously mentioned in the introduction, higher education, for a number of years, was ignored by the international development community due to the belief that it produced lower social returns when compared to primary and secondary education.

Estimating the return of investments in education began in the 1950's and since that time, numerous attempts have been made to establish patterns within the empirical results. Throughout the existing literature, authors Psacharopoulos and Patrinos are cited extensively for their analysis and collection of these estimates based on similar methodologies (Psacharopoulos & Patrinos, 2004). From their work, it is reported that overall private gains are higher than social returns. In addition, the researchers concluded that the average rate of return for another year of schooling throughout all levels is approximately ten percent (Psacharopoulos & Patrinos, 2004). Also included in their

report was the finding that private returns to higher education were increasing especially in developing countries. In 2004, private higher education returns exceeded secondary education returns in sub-Saharan Africa (Psacharopoulos & Patrinos, 2004). This was an important indicator in regards to the historical debate over higher education returns versus that of primary and secondary education returns as indicated in table 2.2 below.

Table 2.2 Returns to investment in education by level, full method, latest year: regional averages (%)

Private	Social						
	Region	Primary	Secondary	Higher	Primary	Secondary	Higher
Asia*		16.2	11.1	11.0	20.0	15.8	18.2
Europe/Middle East*		15.6	9.7	9.9	13.8	13.6	18.8
Latin America/Caribbean		17.4	12.9	12.3	26.6	17.0	19.5
Sub-Saharan Africa		25.4	18.4	11.3	37.6	24.6	27.8
World (Overall)		18.9	13.1	10.8	26.6	17.0	19.0

Source: Psacharopoulos & Patrinos, 2004, * Non-OECD

Because of the historical assumptions regarding the rate of return for higher education, investments in higher education were seen as a regressive policy that simply preserved the existing economic and social structure (Pilay, 2010). This was also partly due to the lack of empirical evidence that higher education impacts economic development (Tilak, 2003). However, in 2003, Tilak researched 49 countries in the Asia Pacific region and found significant effects of higher education on the prospects for economic growth (Tilak, 2003). Tilak used the gross enrolment ratio and educational attainment measured against gross domestic product per capita to illustrate the positive effects of economic development. The data indicated statistically significant results at one percent and a positive regression coefficient, thus confirming the effect of higher education on the economic growth of the nations within the study (Tilak, 2003). The research confirmed

that the important indicators in a country's economic development are the prevalence of higher education levels within the adult population and the gross higher education enrolment levels. However, in order to move beyond a simple correlation between the two and confirm a causal relationship, Tilak introduced a time lag to prove that higher education levels caused the economic development (Tilak, 2003). As a result of Tilak's research, it is clear that higher levels of education and higher education gross enrolment ratios have an important influence on economic growth.

The research by Bloom, Canning, and Chan also challenged the historical rate of return analysis regarding higher education (Bloom et al., 2006). In a paper commissioned by the World Bank, the authors pointed out that the traditional rate of return model concentrates narrowly on the rewards financially to individuals and neglects broader benefits of higher education. These benefits include increased "entrepreneurship, job creation, good economic and political governance, and the effect of a highly educated cadre of workers on a nation's health and social fabric" (Bloom et al., 2006, 18). The authors also note how the traditional rate of return ignores one of higher education's core functions of research and the positive impacts that the research may have on economies. They go on to reference a number of different studies that reflect the importance of higher education in relation to economic growth. The highlighted studies by Bloom, Canning, and Chan include:

- I. A cross-sectional study by Barro and Sala-i-Martin that found significant economic growth effects related to secondary and tertiary male educational attainment. The research concluded that an increase in the average male secondary schooling of 0.68 years raises the annual GDP growth by 1.1 percent a year and tertiary education increases of 0.09 years raises annual GDP growth by 0.5 percent a year (Bloom et al., 2006). The authors also found a correlation between human capital, which will be discussed in chapter 2.4, and GDP. They concluded that countries that lag in GDP tend to grow quicker with high levels of human capital (Bloom et al., 2006);
- II. In the United Kingdom, a study in 1995 by Jenkins looked at an index of productivity such as land, labor and capital to determine the correlation to various levels of educational attainment. The research determined that when university

degrees or qualifications increased by one percent the annual output increased by .42 percent to .63 percent (Bloom et al., 2006);

- III. In Taiwan, a research study also demonstrated that higher education was correlated to the country's economic growth. Researchers there found a one percent increase in the country's higher education stock led to .35 percent increase in industrial growth. Furthermore, the research found that a one percent rise in engineering or natural science graduates led to a .15 percent increase in agricultural output. The study concluded that out of all academic disciplines, engineering and natural sciences had the greatest impact (Bloom et al., 2006);
- IV. In a 1993 study by Wolff and Gittleman, the researchers found that university enrolment rates are connected to labor productivity growth. Their research also found a correlation between the number of engineers and scientists per capita and the country's economic growth (Bloom et al., 2006);
- V. Meulemeester and Rochat in a study of six advanced nations in 1995 found that higher education institutions had a strong causal relationship with economic development in the United Kingdom, France, Sweden and Japan, but virtually no impact in Italy and Australia (DBloom et al., 2006); and
- VI. In a 2004 study in the U.S.A., Bloom et al. indicated that college graduates had higher earnings and productivity than college non-graduates. In a state by state comparison, their research also found that workers in U.S. states where the percentage of college graduates was large earned substantially more than states with few college graduates (D. E. Bloom et al., 2006).

Furthermore, Bloom, Canning, and Chan reviewed evidence on the role that higher education can have on poverty reduction and economic growth. The authors focused on the countries of sub-Saharan Africa where higher education enrollment rates average about five percent and are among the lowest in the world (Bloom et al., 2006). The authors also advocated that because of the dominant historical view that higher education investments were inferior to investments in primary and secondary schooling that African governments neglected funding higher education. For instance, from 1985 to 1989, the World Bank spent 17 percent of their total worldwide education related budget on higher education expenditures (Bloom et al., 2006). However, from 1995 to 1999, the percentage given to higher education declined to only seven percent (Bloom et al., 2006). This

research was important because it highlighted the structural policy issues at an international level regarding African aid that impacted higher education funding hence the relationship with economic development.

Bloom, Canning, and Chan also point to technological catch-up as one way in which higher education can contribute to economic development. The researchers used an extensive collection of data from various countries in Africa to determine the implications that increasing the stock of higher education would have on economic growth (Bloom et al., 2006). Their analysis examined the impact of higher education on labour productivity and output per worker as the worker's education rises. The researchers concluded that expanding higher education may encourage faster technological catch-up and expand a country's capacity to increase economic output (Bloom et al., 2006). The authors calculated that sub-Saharan Africa was twenty three percent below its production possibility frontier (PPF) based on data from the United Nations Educational, Scientific and Cultural Organization (UNESCO) (Bloom et al., 2006). Furthermore, the study determined that increasing the existing level of higher education by one year would result in a technological catch-up rate of .63 percentage points per year and 3.2 percentage points over a five year period (Bloom et al., 2006). This finding was important because it, again, challenged the historical views regarding investments in higher education. It also presented further evidence regarding the role of higher education in technological catch-up which then impacts a country's ability to increase economic output.

In the South African context, Van Heerden conducted a study to measure the impact of higher education institutions on the South African economy. The study used an equilibrium model to simulate various scenarios related to higher education's impact on income and employment (Van Heerden, 2007). By combining the results of the simulation model, Van Heerden reported that increased government spending alone actually has a negative effect on GDP without increases to the professional labour force and productivity. Another interesting finding was in regards to the existing South African workforce. The study calculated that for every ZAR 1.50 in economic growth to occur, the government would have to spend ZAR 2.00 (Van Heerden, 2007). In addition, the study found that enabling high school graduates to move through the higher education system would have 4 to 5 times higher gross domestic product (GDP) effects than the

retraining of existing workers (Van Heerden, 2007). In terms of a cost benefit analysis, the study concluded that if government spending increased the number of professionals in the workforce as well as productivity, that the returns would be up to ZAR 1.90 for every ZAR 1.00 spent on higher education (Van Heerden, 2007). The final conclusion of the study demonstrated that the South African economy could grow by up to ZAR 11.00 for every ZAR 1.00 disbursed on higher education assuming that professionals would increase by one percent and productivity would increase by 0.1 percent (Van Heerden, 2007).

2.4.2. Local Economic Development and Higher Education

Historically, neither public policy nor higher education institutions have focused strategically on the contributions that they can make to the development of their local regions (Pilay, 2010). For the most part, higher education institutions have focused on national goals or agendas in the pursuit of knowledge. In terms of local economic development, the relationship between higher education institutions and economic development is a highly under-researched area (Pilay, 2010). In fact, the lack of academic literature regarding how universities can contribute to local economic growth was one of the original impetuses behind this study.

There are multiple known successful examples of universities being major partners in local economic development such as North Carolina's Research Triangle, Silicon Valley in California and Route 128 in the Boston area are all examples from the United States. Furthermore, others point to successful companies such as Google, Yahoo and Cisco which all grew out of Stanford University research as a basis for demands that universities contribute to local economic growth. However, the best known success stories are atypical, and for the most part, their economic impact is often overstated (Lester, 2005). New business formation as a result of university research accounts for only two to three percent of the total rate of new business start-ups in the USA (Lester, 2005). The same is true of patenting where even in the U.S.A., university patents make up a small fraction of the total stock of patented knowledge. For instance, in 2001, about 3,700 patents were granted to U.S. universities out of over 150,000 nationwide (Lester, 2005). According to Lester, even the most productive patenting higher education institutions are not considered highly active by corporate standards (Lester, 2005).

To contribute to the understanding of the university's role in this under-researched area, a landmark study was conducted at the Massachusetts Institute of Technology (MIT) Industrial Performance Centre in 2002. The study, known as the Local Innovations System Project (LISP) was designed to examine the role of innovation in local industries with the first phase specifically focusing on the contribution of universities. During the project, research was conducted on the influence of local innovation processes spanning backwards up to three decades at 22 locations covering six different countries including the United States, the United Kingdom, Finland, Norway, Japan and Taiwan (Lester, 2005). The results of the study included a typology of industrial transformation processes ranging from indigenous creation, transplantation from elsewhere, diversification into technology related industries, and upgrading existing industries (Lester, 2005). However, the researchers concluded that the role of universities depended heavily on the transition that was occurring (Puukka & Marmolejo, 2008). More importantly, the outcome of the transition in every case was dependent on the capacity of the companies to identify new technological market opportunities and develop that into new technological market knowledge (Lester, 2005). The study also found the firms to be reliant on external factors including local suppliers, financial services, local higher education institutions, public research foundations, government agencies, and to a lesser extent local attitude towards entrepreneurship and the quality of local leadership. The firms, combined with the external factors, made up what the researchers termed the local innovation system (Lester, 2005, 7).

Within the local innovation system, the researchers concluded that universities can strengthen local innovation processes in five key areas. The first area is through the direct contributions of patenting and licensing by which scientific discoveries are made in university laboratories (Lester, 2005). In addition, universities can assist in attracting new knowledge resources from elsewhere that typically involve knowledge-intensive sectors related to research and development (Puukka & Marmolejo, 2008). The second area involves providing indirect support primarily through education (Lester, 2005). The university can also act as a public space for conversations and dialogue with local industry leaders regarding the future of technology, markets and industrial development (Lester, 2005). This can include meetings, conferences, networking programs, entrepreneur and investor forums, discussions of department curriculum and others. The

focus of these conversations is typically not technical in nature but is geared more to generate ideas for future problem solving within industry and the university (Lester, 2005). The third avenue involves the local environments, current practices and entrepreneurial outlooks that lead to effective technology up take (Lester, 2005). Essentially a distinct local pattern of university-industry interaction must be developed at each higher education institution. The fourth finding included a strategic university approach to their role in the local innovation process (Lester, 2005). This includes developing an understanding of strengths and weaknesses of local industry and of the higher education institutions to develop a comprehensive local approach rather than adopt a one size fits all approach (Puukka & Marmolejo, 2008). The fifth area involves a planned approach to local economic development that is well-suited with the university's traditional core of teaching, learning and research (Lester, 2005).

The conclusions of the MIT study have major future implications for higher education institutions and local economic development. One of the main findings was that no single strategy was the solution for sustaining economic growth everywhere (Lester, 2005). Additionally, the investigators found the university to often be a broker between local entrepreneurs and the university's researchers when examining the creation of new industry. However, with transplanted industries, the university played more of a human resources type of role by creating curriculum and continuing education to support growth. For diversification of existing firms, universities often facilitated linking firms together in regards to technology advancement. When local industry considered upgrading their technology, universities often acted in a problem solving role via consulting or contract work (Lester, 2005). When considered as a whole, this research study significantly strengthens the existing body of knowledge regarding the role that universities have in local industry innovation and ultimately economic growth.

2.4.3. Contributing to a Knowledge-Based Economy

It is well documented throughout the literature that knowledge is recognized as the single most important component in the competitiveness of communities, regions, nations and firms. According to Duderstadt, societies continue to transition into knowledge-based economies where intellectual capital is replacing physical and financial capital as the primary avenue to prosperity, strength and well-being (Duderstadt, 2000). Educated people and their ideas, within the new knowledge-based economy, have become the

wealth of nations (Duderstadt, 2000). As a result, higher education institutions have never been more important and the significance of a college education never higher. Furthermore, there is a growing consensus regarding public investments that few have a higher economic return than investments made in higher education (Duderstadt, 2000).

It is also argued that as society becomes more knowledge intensive, it also becomes more reliant on institutions that create knowledge and educate people. As a result of an increasing knowledge driven society, more and more individuals pursue higher education as the hope for a brighter tomorrow helping to ensure better careers and to fulfilling purposeful lives (Duderstadt, 2000). Institutions of higher education offer educational opportunities that create knowledge and provide services to almost every part of society including: personal prosperity, economic competitiveness, national safety, environmental protection and enriching culture (Duderstadt, 2000).

According to Huggins and Izushi, at a basic level, the knowledge base of an economy can be defined as the ability to introduce and innovate with new ideas, considerations, processes and, ultimately, products that will translate into economic development by generating wealth and thus increasing the value of a regional economy (Huggins & Izushi, 2007). This is important because institutions of higher education through one of its core functions of research create new ideas, thoughts, processes and products. As a result, universities are key players in contributing to a knowledge-based economy.

Additionally, regional innovation and engagement have become fundamental themes in higher education mission statements as the role of universities in creating innovation and strengthening technology communities have become more widely recognized (Smith, 2007). The term “triple helix model” has been coined to formalize the view that universities should be increasingly innovative where the spill-over effects of knowledge transfer are the consequence of purposeful restructuring that enables the creation of economic infrastructure such as science parks and business incubators (Etzkowitz & Zhou, 2006). Public policy practitioners have endorsed the triple helix model of economic growth that advocates participation between three primary stakeholders: government, business, and higher education (Etzkowitz, 2003). Importance has been given to the triple helix model through the establishment of the aforementioned science

parks and business incubators that allow each stakeholder to undertake activities for which they may have been previously excluded (Etzkowitz, 2003).

Emphasis on the triple helix model can also be seen through industrial policies which strive for creating an industrial structure rooted in a strong engagement in networks and coalitions with universities (Etzkowitz, 2003). In addition, according to Asheim, the triple helix model has also gained widespread acceptance for improving economically disadvantaged regions. Their research advocates for policy support of basic and applied research in order for a triple helix cluster to evolve. The authors conclude that people and business policies should be equally prioritised so that the triple helix cluster relations focuses on quality of place in addition to business concerns (Asheim, Coenen, Moodysson, & Vang, 2007).

In terms of national triple helix policies, the Bayh-Dole Act helped to further the idea of United States universities as leaders in their regional business communities within the U.S. The Bayh-Dole Act was legislation that is broadly attributed to increasing the growth of technology transfer and research collaboration through the establishment of regional clusters in the U.S. (Mowery & Sampat, 2005). Many scholars agree that as a result of the legislation, the U.S. has several leading examples of regional clusters including Silicon Valley area in California, Route 128 near Boston, Massachusetts and the Research Triangle in the state of North Carolina which have evolved around the universities of Stanford, MIT and the University of North Carolina-Chapel Hill, respectively (Huggins & Izushi, 2007). In addition, regulatory reforms in Japan and Europe have been on-going to attempt to increase technology commercialization from higher education institutions (Mowery & Sampat, 2005). Some of the regulatory reforms have included altering intellectual property rights towards research institutions and eliminating professor privilege (Mowery & Sampat, 2005).

According to Mowery and Sampat, there has also been widespread international policy imitation of the Bayh-Dole Act that has resulted from the notion that university patenting is critical to knowledge transfer (Mowery & Sampat, 2005). However, the authors conclude that emulation efforts of the Bayh-Dole policy elsewhere may have little success without greater attention to the fundamental structural dissimilarities between higher education systems in other countries. Furthermore, many critics of the knowledge

transfer policies maintain they overlook other important ways that universities contribute to economic growth and innovation. Authors such as Etzkowitz and Zhou (2006) advocate a balanced approach when discussing the university's commitments of the emerging third mission of diffusing knowledge within the surrounding community to the existing teaching and research missions. Furthermore, the knowledge transfer initiatives should be fully supported with open regional policy that will ensure long-term sustainability.

2.4.4. Human Capital Development

Throughout the literature, many economists and higher education practitioners agree that another main contribution of higher education institutions to society includes the impact on human capital development. The World Bank outlines human capital as "people's innate abilities and talents plus their knowledge, skills and experience that make them economically productive" (World Bank, 2004, p.1). Furthermore, human capital can be improved by investments in education, health care and employment training (World Bank, 2004).

In addition, higher education's impact on human capital development can be documented by providing individuals with both private and public benefits. Private benefits are exclusive to the educated individual such as increased earnings, health benefits and children's education. Public benefits include the spillover effects to the society in general such as higher employment, lower crime rates and greater civic participation and community involvement (McMahon, 1998). The following will examine both the private and public benefits of higher education to society and specifically to the local surrounding communities.

The personal benefits of increased levels of education can include increased earnings, positive impacts on children's education and even improved health benefits for the individual. The most obvious choice is that many individuals pursue higher education for the potential of earning higher incomes. According to Becker, additional college experience and obtaining one or multiple degrees allows individuals the opportunity to acquire skills that ultimately make them more valuable to future employers (Becker, 2009). A landmark study by Ashenfelter and Rouse tested the theory of returns from education by controlling for inherited genetic differences using twins (Ashenfelter &

Rouse, 1998). Their research estimated that the average return for additional education is about 9 percent per year and equally important, they found that returns may be somewhat lower for high capacity individuals concluding that education compensates for the genetic differences (Ashenfelter & Rouse, 1998).

Furthermore, increased levels of education by an individual can benefit their children's education as well. Researchers have found a positive correlation when comparing the education levels of parents and their children. According to Leibowitz, the investment in education time at home is positively and significantly related to childhood human capital and is directly correlated to the mother's education level (Leibowitz, 1974). Furthermore, the study concluded that a child's education by the ages of 29 and 39 were directly related to the parents' education level (Leibowitz, 1974).

Finally, additional education by an individual can have improved health benefits as well. Studies have shown that increased education particularly regarding the female of the household leads to healthier children (McMahon, 1997). In addition, researchers have found that higher education rates can also contribute to greater life expectancy when comparing people with a high school education versus a bachelor's degree (Pappas, Queen, Hadden, & Fisher, 1993). According to the study, death rates in individuals with a higher education declined 43 percent for black women and 28 percent for white women while declining 25 percent for black men and nearly 35 percent for white men (Pappas et al., 1993).

In addition to private benefits of education directly benefiting individuals, there are also public benefits including spillover effects to the society at large such as higher employment, lower crime rates, and greater civic participation and community involvement (McMahon, 1998). According to McMahon, individuals with additional education are more likely to have lower underemployment rates and unemployment rates (McMahon, 1998). Furthermore, increased education correlates with labour force participation and with productivity growth. Additional education encourages postponement of retirement, second careers, and extended labour force participation as individuals become older (McMahon, 1998).

Lower crime rates are also considered a spillover effect of additional education. Ehrlich developed a framework that produced evidence that higher education offers motivation

for individuals to refrain from criminal activities through less discretionary time, higher levels of productivity, and higher opportunity costs of being incarcerated (Ehrlich, 1975). In addition, higher education is typically seen as an investment or delayed gratification for future earning potential. The possibility of higher stable wages in the labour market could entice individuals to wait for returns on higher education returns. However, individuals that enter criminal activity at a young age typically view crime as easily accessible due to no educational requirements and potential instant earnings (Ehrlich, 1975). Unfortunately, young individuals that enter criminal activity may always view current criminal earnings greater than legitimate employment. This also leads to increased crime rates and police expenditures which, possibly, could be reduced by investments in college education (Ehrlich, 1975).

There is also a positive correlation between higher education and civic participation according to McMahon (McMahon, 1998). Studies have shown that individuals with higher education tend to be more likely to vote and hold a greater sense of civic responsibility. In regards to civic engagement, educated individuals tend to become involved in public policy issues such as a clean environment. Studies have also shown that individuals with a higher education tend to be more aware of the impacts their consumer choices have on the environment and may place a greater importance on pollution reduction than less educated individuals (McMahon, 1998). Volunteerism rates are higher for individuals with higher education degrees even though the opportunity costs for the time needed to volunteer would typically be higher (McMahon, 1998). Increased education is also associated with greater financial support for charities. Research has shown that individuals with a college degree typically volunteer and donate about twice as much as their counterparts with only a high school education (McMahon, 1998).

2.4.5. Critical Analysis of Higher Education and Economic Development

Not all researchers are in agreement that higher education substantially contributes to economic growth. Research conducted done by Vedder, Feldman and Desrochers call into question the true impact of higher education on economic growth (Vedder, 2004). In addition, the Organization for Economic Co-Operation and Development (OECD) 2008 report detailed how the higher education relationship to promoting economic growth is

often constrained by public policy, inadequate funding, limits to institutional leadership, and limited capacity at the local level (Santiago et al., 2008). The following examines the work by Vedder, Feldman and Desrochers, and the OECD from a critical viewpoint by further exploring the relationship between higher education and economic development. This section will attempt to move beyond summarizing the existing research and offer interpretations for a critical perspective. Furthermore, this section will seek to organize the existing research into understandable patterns and evaluate the literature.

In a 2004 study by Vedder, spending more for higher education was questioned in regards to its essentiality in providing higher returns for the local economy (Vedder, 2004). In a study using all 50 U.S. states and the District of Columbia, Vedder found that even after controlling for other variables, states which spend more on higher education often do not have faster economic growth than states which spend less (Vedder, 2004). In fact, Vedder's statistical evidence actually showed a negative association with economic growth. Furthermore, Vedder also produced evidence illustrating that governmental higher education expenditures have almost no impact on college participation rates (Vedder, 2004). As discussed in the author's conclusions, the notion that increased spending promotes greater access to disadvantaged students should also be questioned based on the empirical evidence from the study. Although Vedder's work did not dispute the overall relationship between higher education and economic development, it did infer that effects of higher education may be much less than other research has claimed.

Another prominent study questioning the impact of higher education and economic development was done by Feldman and Desrochers in 2004. Their research is highly significant to this study because it focuses on the relationship between John Hopkins University and the university's impact on the surrounding community. Also important is the fact that John Hopkins University is one of the most highly recognised higher education brands (Feldman & Desrochers, 2004). The researchers found that in spite of being one of the largest federally funded research universities in the United States, the university has failed to transfer its surrounding community of Baltimore into a hub for high technology (Feldman & Desrochers, 2004). Although their conclusion may place unrealistic transformation expectations on a university, it nevertheless points out an obvious discrepancy between knowledge creation and regional knowledge transfer within the community (Feldman & Desrochers, 2004).

In addition, the Organization for Economic Co-Operation and Development (OECD) 2008 report detailed how the higher education relationship to promoting economic growth is often constrained by public policy, inadequate funding, limits to institutional leadership, and limited capacity at the local level (Santiago et al., 2008). The report pointed out how national education policy with hierarchical administrative based systems often restricts university autonomy, and as a result, economic engagement at the regional level. The authors suggest a balanced approach to meeting national policy objectives while allowing applied research and development locally to meet regional economic growth goals (Santiago et al., 2008). The report also suggests funding incentives are often structured to provide limited support for regional endeavours. Furthermore, researchers concluded that regional governance structures were oftentimes less than ideal systems in order to further a regional agenda perspective for institutions of higher education (Santiago et al., 2008). Their conclusions pointed to the territorial coverage of local and regional governments as a limiting factor to regional university engagement. This is due, in part, to some local governments actively participating in economic development initiatives while others do not.

The OECD report also details steps to overcoming barriers to higher education and regional economic development such as increasing the role of higher education institutions in regional innovation systems as previously discussed, and enhancing participation in cluster type initiatives (Santiago et al., 2008). The report notes that human capital barriers can be overcome through educating a wider range of individuals in the local area, focusing on career development and employability after leaving the institution, adapting to local employers skill requirements, supporting continuous professional development, and attracting talent from the outside (Santiago et al., 2008). In addition to supporting economic development, the report also recommends the promotion of the social, cultural and environmental development of the region through higher education community engagement. However, the researchers suggest this role is often underdeveloped and should be supported with additional public policy and funding incentives (Santiago et al., 2008).

2.4.6. Higher Education Economic Impact Studies

“There has been a corresponding growth of interest in measuring the impacts of higher education on regional economies. University activities, particularly knowledge-based activities such as teaching and basic research, have been found to have substantial positive effects on a variety of measures of regional economic progress” (Drucker & Goldstein, 2007).

Higher Education Institutions are increasingly requested to justify the allocation of regional and national funds toward their programs (Brown & Heaney, 1997). As a result, the institutions commonly respond by conducting economic impact studies detailing expenditures that help to expand the region’s economic base (Drucker & Goldstein, 2007). The central question posed in the majority of higher education economic impact studies is the following: how much better off are area residents as a direct result of the educational institution? Unfortunately, some studies claim annualized rates of return exceeding 100 percent, which seriously call into question the validity of such studies and the reliability of the authors (Siegfried, Sanderson, & McHenry, 2007). Furthermore, if the economic impact studies were conducted with the same academic standards and review required of faculty research, the results would not be so overstated and would result in renewed legitimacy of such studies (Siegfried et al., 2007).

As a result of an economic impact study conducted by Caffrey and Issacs, the basic rules for conducting an economic impact analysis of institutions of higher education were established by the American Council on Higher Education (ACHE) in 1971 (Blackwell, Cobb, & Weinberg, 2002). This is important because previously, the basic rules and metrics were largely driven independently by each higher education institution conducting the study. Furthermore, the common approach used in numerous university economic impact studies determines the impacts based on institutional exports such as direct expenditures, payroll and other operations of the university, then uses a range of multipliers to extrapolate the impact throughout the local economy (Blackwell et al., 2002). As previously mentioned, higher education institutions also define how the local area residents are better off in terms of regional employment, per capita income and sometimes local tax revenue. In order to compare these economic indicators, a standard economic analysis procedure would include examining the same indicators in a geographic area “but for” the higher education institution (Pilay, 2010). Viewed in

another way, it is important to ask the question: if the higher education institutions did not exist, would the same resources produce a similar or higher level of economic growth?

The complexity of higher education economic impact studies and their reliance on persuasive statistics often lead to a variety of measurements. A commonly referenced example, in terms of measurement, is the case of Loyola-Chicago and Northwestern University which are similar in size, and are private higher education institutions located within just a few miles of each other. In 1994, Loyola estimated its local impact to be \$1.04 billion or \$1.42 billion in 2006 dollars, while Northwestern claimed on \$145 million in 2006 (Siegfried et al., 2007). This example showcases the issue of comparison for these types of studies especially if they are to be used by public policy makers regarding funding decisions. In fact, even among common variables, higher education impact studies have been found to have wide ranges of reported impacts. For instance, Siegfried surveyed 98 studies and found the multipliers for job impacts to range from 1.03 to 8.44. In addition, numerous economic impact studies also estimate returns on \$1 dollar of government spending. In a survey of 67 economic impact studies, Siegfried found values that ranged from 1.84 to 26 with a mean of 5.7 and a standard deviation of 3.79 (Siegfried et al., 2007). While these studies were attempting to show a high return on the government's investment, they do call into question the validity of the entire study when such inflated rates of return are found. As a result, various higher education institutions and associations in the U.S. have called for a standardizing approach to university economic impact studies.

2.4.7. Methodological Approaches to HE Economic Impact Studies

There are various competing methodological approaches to economic impact studies involving institutions of higher education. The fundamental process is to calculate the total expenditures of the higher education institution and apply regionally based multipliers to explain the relationship between the university and local economic activity (Siegfried et al., 2007). The outcome is an estimated local economic impact that is normally accompanied by a common dollar figure headlining the report. For instance, Loyola University Chicago generated a \$1.04 billion dollar economic impact and created or sustained nearly 15,000 jobs in the Chicago area in 1994 (Siegfried et al., 2007). In the following, the most commonly used individual university economic impact study will be

discussed along with two recently introduced trends noted in the literature including a skills base view and bill-of-good approach.

The methodology for higher education economic impact studies was heavily influenced by Caffrey and Issacs' work in establishing the basic rules for conducting an economic impact analysis of institutions of higher education through the American Council on Higher Education (Blackwell et al., 2002). As a result, higher education economic impact analysis inputs typically include: cumulative payroll data, minus federal taxes, supplies, equipment and services expenditures, capital construction costs, faculty members, administrative staff and student expenditures in the local community, public and private support of research contracts and grants, student paid fees and tuition from outside the immediate area and expenditures by visitors including alumni who visit the campus for academic or athletic purposes (Siegfried et al., 2007). Keynesian style multipliers are then used to account for the direct and induced impacts of the aforementioned indicators (Drucker & Goldstein, 2007). Studies may also include students migrating in from other states that remain in-state, lifetime alumni earnings, and state sales taxes paid. In addition, some studies also claim impacts from university innovation activities, technology transfer, and public service. Furthermore, others also discuss enhancements to quality of life including contributions to local arts and cultural activities through museums, theatre, art exhibitions and musical performances which are typically available to the general public (Siegfried et al., 2007).

In addition, recent economic impact studies have used a new approach that takes into account higher education institutions' contributions to a region's skills base. Bluestone originally argued for the scope of university economic analysis to be expanded to cover the skills base of a region and for it to be counted due to the fact that universities produce skilled workers with degrees that earn a higher income than without degrees (Bluestone, 1993). However, since universities may use this approach in their assessments, it is important to consider the validity of such a methodology (Pilay, 2010). Although the skills-based approach produces favourable results for higher education, skills-based studies, many times, fail to control for migration of skills into the study area. As a result, studies that use a skills-based approach tend to substantially overestimate the economic and skills contributions of the higher education institution on a local area (Pilay, 2010). In fact, Brown and Heaney also concur with Pilay's position that the skills-based approach

substantially overestimates results due to incomplete consideration of migration effects (Brown & Heaney, 1997). Furthermore, the authors point to job growth and economic expansion as the main sources for measuring economic impact (Brown & Heaney, 1997).

Another methodology that is being promoted is known as the bill-of-goods approach. According to Ambargis, a university's economic impact analysis can be significantly improved through this approach (Ambargis et al., 2011). The bill-of-goods approach uses in-depth data on the purchases of locally produced inputs and the effects are then combined with the initial change to arrive at the total economic impact (Ambargis et al., 2011). However, this approach requires the gathering of local data and the inclusion of specific categories for budgeted expenditures. The data must also include expenditures that have been made locally, and the residence of the university's employees (Ambargis et al., 2011). Using a bill-of-goods approach is especially important for studies examining the local university impacts because it helps to determine how much spending actually remains in the local economy. Researchers advocating this approach are currently working with a consortium of universities in the United States to compare actual results from projects with estimates from other methodologies to test the accuracy of the bill-of-goods approach. Their next steps include the development of added examples based on the economic activities that institutions of higher education perform (Ambargis et al., 2011).

In a 2007 study, Siegfried conducted research into 138 higher education impact studies covering 241 individual institutions since 1992 (Siegfried et al., 2007). Siegfried's article described some of the common methodological approaches along with common problem areas that should be addressed. According to the author, the problems in university economic impact studies include implicit descriptions of the counterfactual, definition of the local area, the tendency to double count outputs, identification of new expenditures, the impact of local taxes, and the exclusion of human capital spillover effects generated by higher education (Siegfried et al., 2007).

The first major common methodological challenge involves the extent the counterfactual argument is developed within the study. That is, the extent to which the study defines how the local area residents are better off in terms of regional employment, per capita income and sometimes local tax revenue (Swenson, 2011). Standard economic analysis

procedure includes examining the same indicators in a geographic area “but for” the higher education institution (Pilay, 2010). In addition to the counterfactual evidence, many studies exclude the topic of the opportunity cost of investments to both private and public higher education institutions (Siegfried et al., 2007). For instance, a million Rand in tax revenue to higher education may have been directed to primary education, healthcare, highway repairs or tax cuts. Moreover, one should not assume that the same tax revenue spent on school teachers, nurses or highway crews would reverberate or multiply any differently in the local economy than funds spent on teachers, staff and students at institutions of higher education (Siegfried et al., 2007).

One impact study, conducted by Felsenstein at Northwestern University in Chicago, did address the counterfactual situation. Using a simulation, the study showed only a slight amount of alternative economic activity based on the removal of the university (Felsenstein, 1996). However, according to Siegfried, few studies articulate such a scenario because establishing an alternative model without a university involves several challenging issues (Siegfried et al., 2007). The first issue is that institutions of higher education are not created and dissolves quickly, unlike some counterpart business organizations in the private sector (Siegfried et al., 2007). The second issue is that no one really cares what the economic stimulus effect is on an area void of residents (Siegfried et al., 2007). Siegfried argues that methodologically, this is where most university impact studies go wrong because many fail to account for the area without the university’s presence (Siegfried et al., 2007). Third, most impact studies compare economic activity generated by the university as all or nothing with complete absence of the university. The fourth issue is the disregard for the change that occurs when new faculty and administrators migrate to an institution of higher education (Siegfried et al., 2007). While in larger communities additional staff migration may create positive externalities, it can also lead to negative externalities including increased congestion, conflict, and pollution (Gumprecht, 2005).

The second major methodological challenge involves the clear delineation of the economic impact study area (Siegfried et al., 2007). The two main principles that govern the study boundaries are the study purpose and consistency throughout the analysis (Siegfried et al., 2007). Essentially, this involves asking who the target audience for the study is. For example, if a public university wishes to legitimize public tax funding for

the national legislature, the study should encompass the entire country. However, if the same university seeks to demonstrate value to the local community, then a municipality boundary would be more appropriate. Geographic boundaries have two important effects on economic impact studies: measuring new spending and choosing the appropriate multiplier (Swenson, 2011). In general, when the geographic area study area increases, the amount of new expenditures should decrease. However, the reverse is also true as the smaller the geographic area becomes, the larger proportion of total expenditures can be treated as proper imports and exports (Ambargis et al., 2011). For instance, new expenditures should be counted only for a student that moves to a geographic area for college. Conversely, if the student moves to a geographic area with multiple colleges such as a state, and then chooses one university over the other, the net effect is zero. Multipliers work similarly as well by expanding in a smaller geographic area or closed economy, and contracting in a larger area or more open economy (Ambargis et al., 2011). While many economic impact studies use “off the shelf” rate multipliers, it is important that the multiplier match the geographic area under consideration (Siegfried et al., 2007). For smaller geographic area studies, according to Swenson, researchers should consider developing their own rate multipliers through surveys of local faculty, staff, and students (Swenson, 2011).

An additional methodological challenge discussed in the literature involves measuring only first round expenditures and avoiding double counting (Swenson, 2011). According to Siegfried, many universities count all expenditures of a university, and such an approach is never statistically valid (Siegfried et al., 2007). One must assume that some income the university derived and then spent again does not represent new money coming into the local economy. As a result, it is important to control for new spending and ensure that it is counted only once (Swenson, 2011). This is important because the inclusion of induced impact can lead to overestimates and bias when comparing studies. As a result, it was recommended to use direct and indirect impacts in order to measure impacts that occurred “but for” the university. The easiest way to accomplish this is to measure expenditures by the higher education institution and payments to local businesses controlling for the previously defined geographical boundaries. Furthermore, the expenditures percentage related to import or export substitution should be classified by

revenues from two groupings: inflows “but for” the institution and those that would have come in regardless of the institution (Siegfried et al., 2007).

A different methodological issue that impacts assessments are multipliers (Swenson, 2011). The multiplier effect involves local expenditures that create new income spent locally, thus multiplying the effect of the original expenditures (Ambargis et al., 2011). Researchers typically use two types of approaches to determine multipliers known as the comprehensive model and the numeric multiplier model (Siegfried et al., 2007). Using the comprehensive or regional impact model, researchers attempt to forecast local economy and then exclude the university’s economic activity, with the difference being the impact of higher education on the economy. The other type of method uses a numeric multiplier applied to new disbursements involved with the university. However, the regional impact model’s advantage is the ability to change parameters while the numeric multiplier model’s advantage is cost and convenience (Siegfried et al., 2007).

The next methodological issue discussed in the literature includes the factoring in or exclusion of local taxes. Most public higher education institutions are exempt from paying local property taxes and as a result place an additional burden on the local community to replace otherwise taxpaying property. However, Gumprecht reported that about 11 percent of universities make payments in lieu of taxes to their communities and up to 38 percent of universities pay taxes in communities with less than 25,000 residents (Gumprecht, 2005). One could also argue that higher education institutions increase surrounding property values through competition to provide services to the university students and staff (Siegfried et al., 2007). Siegfried also notes that the actual net difference between local taxes avoided and paid, university services delivered in lieu of taxes, and the perceived positive impacts on property values, are often contentious and as a result are seldom explored in economic impact studies (Siegfried et al., 2007).

The final methodological issue discussed in the literature accounts for local spillover benefits resulting from human capital development. With everything else considered equal, higher education institutions should be producing human capital impacts larger than any sports venue or manufacturing facility; after all, it is their main purpose (Siegfried et al., 2007). Higher education’s impact on human capital development can be documented by providing individuals with both private and public benefits. As previously

noted, private benefits are exclusive to the educated individual such as increased earnings, health benefits and children's education. Public benefits include the spillover effects to the society in general such as higher employment, lower crime rates, and greater civic participation and community involvement (McMahon, 1998). In addition, other positive community spillovers can be found. Moretti concluded that an increase of 1 percentage point in college graduates improved wages of other college graduates by 0.4 percent, high school graduates by 1.6 percent, and local high school dropouts by 1.9 percent (Moretti, 2004). However, from a methodological point of view, an important step is differentiating between human capital developments that are local and non-local, as many spillover effects may not depend on the presence of a higher education institution (Siegfried et al., 2007). Furthermore, impact studies should better articulate how the university's presence contributes to human capital development in regards to documented private and public partnerships for the geographic area identified in the study.

2.5. Integrated Conceptual Framework

A conceptual framework can be defined as a visual or written product that explains the main areas to be studied including key factors, variables, or concepts along with the relationships between them (Miles & Huberman, 1994). Furthermore, according to Maxwell, it is principally considered a conception or model of what is out there that the researcher plans to examine, what is going on and why it is happening (Maxwell, 2012). The following will present a written and visual conceptual framework in order to integrate the previously discussed literature with the relevance for this study.

The academic literature and expert views detailed in this chapter can be combined into four main dimensions: the role of higher education policy and analysis, the extent of higher education community engagement, the degree in which higher education contributes to economic development and the scope of traditional higher education economic impact analysis. These four dimensions combined can be used to determine the impact of individual higher education programs, initiatives, and agreements or determine the impact of the university as a whole.

Historically, higher education policy and analysis particularly in the South African context has sought to actively engage higher education institutions in social issues and to

a lesser extent more recently economic issues. Typically, higher education policies are aimed at social transformation and community engagement by universities. As a result, higher education institutions are increasingly requested to justify the allocation of regional and national funds toward their programs (Brown & Heaney, 1997). With the current higher education mandates in place, and through a coordinated public policy approach, higher education institutions could create a climate that is conducive to development through initiatives that create strategic partnerships between the private and public sectors (Hay & Monnapula-Mapesela, 2009).

At the same time however, many higher education institutions have responded by commissioning economic impact studies that overwhelmingly focus on economic variables with only passing references to social impact. These studies primarily focus on a university's contribution to economic development, knowledge creation, human capital development and expenditures that help to expand the community's economic base. Regrettably, as was previously noted, some studies claim annualized rates of return exceeding 100 percent which delegitimize the validity and the reliability of such studies (Siegfried et al., 2007). Furthermore, according to Siegfried, if the higher education economic impact studies were conducted with the same academic standards and review required of faculty research, the results would not be so overstated and would result in renewed legitimacy of such studies (Siegfried et al., 2007).

Therefore, to capture the full impact of higher education institutions, a new conceptual framework is needed that can be used to chart future studies on the "socio-economic impact" of higher education institutions. Socio-economic impact studies should articulate the social and economic influence that higher education institutions bring to a community by giving each equivalent weight. To view higher education impact through a different lens by simply using the social or economic side alone leads to inadequate and incomplete research conclusions. Socio-economic impact studies should focus on the already established methodologies for higher education economic impact studies while combining emerging methodologies for capturing social impacts.

After reviewing the current research related to previous studies and in order to make a significant contribution to future studies, it is recommended that a pragmatic approach or paradigm be used for higher education socio-economic impact studies. Although there are

multiple variations regarding a pragmatic research philosophy, the pragmatism approach is grounded in American public administration scholars such as John Dewey and Charles Sanders Peirce. Also known as classical American pragmatism, the philosophy uses inquiry through methods of science in order to satisfy the researcher's doubts (Shields, 2003). Classical American pragmatism teaches the importance of placing the research problem as essential to the study and using all approaches necessary to understand the research problem (Creswell & Clark, 2007). As it related to higher education socio-economic impact studies, researchers are at liberty to choose the various methods, practices and processes that are a best fit for their particular research (Creswell, 2008). In the same way that pragmatists do not see the world in complete agreement, researchers should be allowed to use multiple tactics for collecting and analyzing data rather than adapting to one way (Teddlie & Tashakkori, 2003).

Furthermore, Patricia Shields introduces the concepts of critical optimism and a community of inquiry to provide a useful lens to better understand classical pragmatism in theory and in practice. First, critical optimism involves the faith that if we act collectively using a scientific attitude to approach an issue, then it has the potential to be solved (Shields, 2003). Critical optimism should enhance higher education socio-economic impact studies by orienting the researcher into a belief in the capacity for progress or any organized undertaking for a public good (Shields, 2003). Shields argues that critical optimism embraces uncertainty and change with a critical attitude and by doing so critical optimism avoids the pitfalls of conventional optimism and pessimism (Shields, 2005).

A community of inquiry is an organizing principle centered on a problematic situation, a scientific attitude and participatory democracy. First, a problematic situation serves as a catalyst for a researcher or community to action by investigating (Shields, 2003). Second, a scientific attitude is important in regards to using a working hypothesis to guide collection and analysis of data. Finally, participatory democracy is used to link the interaction of the surround community and the facts (Shields, 2003). As it relates to higher education socio-economic impact studies, leadership is also an important component of communities of inquiry. Leaders that have fixated belief systems, display an unwillingness to confront new evidence and are uncomfortable with uncertainty will make the process much more challenging (Shields, 2003). For socio-economic impact

studies to succeed, higher education institutions must adopt a community of inquiry model and be open to potential criticism regarding their impact. These studies should be used as a measurement tool that objectively evaluates the university's impact and should be repeated consecutively over multiple years. Studies should not be used to simply trumpet the university's impact to politicians and community leaders in order to justify more public funds. Ultimately, a community of inquiry is a conceptual instrument that researchers and practitioners can use to help understand and form conclusions regarding perceptions of impact (Shields, 2005).

Figure 2.6 combines the previously discussed dimensions and paradigms into a conceptual framework which can be used for future studies on the socio-economic impact of higher education institutions.

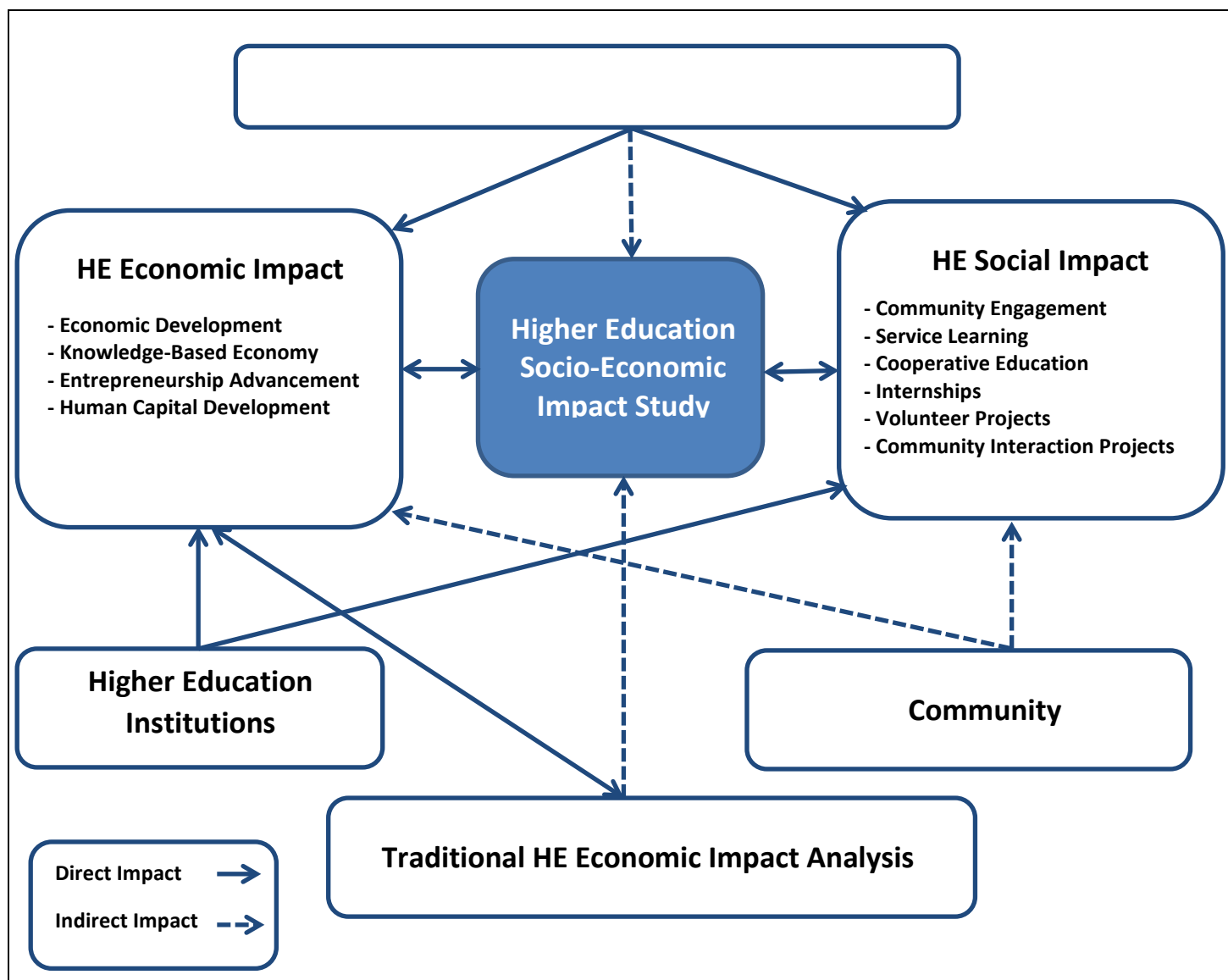


Figure 2.6 An integrated conceptual framework for a Socio-economic Research Study

2.6. Conclusion

This chapter provided an overview of the current body of literature related to higher education policy analysis, higher education and community engagement, higher education and economic development, and higher education economic impact studies. It is evident even to the casual observer that the topics discussed and their interrelatedness are a dialogue that is both complex and evolving. The higher education policy analysis piece forms the basis for this research study through Stellenbosch University’s community interaction agreements. The higher education community engagement and

economic development sections relate directly back to determining how the impacts of the policies occur. The final topic of higher education policy relates to how impact studies are traditionally modeled and gives insight into emerging methodologies. In addition, the various academic literatures relate to each issue and were discussed with special attention given to the critical analysis perspectives. The next chapter will provide an overview of the specific research design and methodology used in this study.

Chapter 3 Research Design & Methodology

3.1.Introduction

This chapter elaborates on the research design and methodology briefly discussed in chapter one. According to Babbie, if epistemology is labeled as the science of knowing, then methodology could be referred to as the science of finding out (Babbie, 2010). Silverman defines the methodology as a researcher's general approach to studying research topics and therefore, it should reflect an overall research strategy (Silverman, 2009). Another perspective, according to Kumar, is that research design and methodology involves a systematic process that includes collecting data, logically analyzing data and then interpreting the results to answer a given research question (Kumar, 2011). In addition, the research process is not limited to one particular approach, but includes various methods and approaches of investigating a research question (Kumar, 2011).

Drawing on a review of the existing literature and the pragmatic worldview observations of previous case studies, this study used a mixed methods research approach to assess the impact of Stellenbosch University on regional and local development. The first part of the study included a qualitative policy analysis using administrator questionnaires, followed by a quantitative review of Stellenbosch University's community interaction database with questionnaires, and concluded with a quantitative university economic impact study. The implementation of the qualitative and quantitative aspects of the study are also discussed in this chapter along with a description of the research questions and aim, research design, research paradigm, mixed methods approach, procedural plan, research phases, data analysis, validity and ethical considerations.

3.1. Overview and Delineation of the Research

Local communities around the world are concerned with their economic well-being in an increasingly knowledge-based global economy and as a result their focus has shifted towards local higher education institutions as the source of educated skilled workers and new ideas (Lester, 2005). Throughout history, there has been little discrepancy among higher education administrators and economists that investments in education are critical for the economic and social development of countries. In fact, the international development community and donor foundations have highlighted primary and secondary

educational systems as key areas for development funds (Bloom, Hartley, & Rosovsky, 2006). Many early studies found that returns to primary and to a lesser extent, secondary education were greater than other levels of education. Only in recent history has tertiary education been recognized as a means to increase economic prosperity and diminish poverty due to historically perceived lower returns (Bloom, Canning, & Chan, 2006).

Through a cursory review of the literature, it is well documented that higher education can produce both public and private benefits that rival lower educational levels. As a result, higher education policy is becoming progressively more common on national agendas as evidenced by its inclusion on many national economic development plans, Poverty Reduction Strategy Papers (PRSPs) and various other international development strategies. There is increased awareness that higher education is a major force for economic prosperity in an increasing knowledge-driven economy and as a result, has made higher education more vital than ever to every country (Santiago, Tremblay, Basri, & Arnal, 2008).

As southern African countries and, specifically, the Southern African Development Community (SADC) share a disproportionate number of countries listed among the lowest Human Development Index (HDI) ratings in the world, it is imperative more than ever that higher education contributes to the economic development (United Nations, 2011). In addition, enrolment totals for colleges and universities in Sub-Saharan Africa are by far the lowest in the world (UNESCO, 1999). In a 2006 report by Bloom, Canning and Chan, the overall enrollment rate in the region stood at 5 percent (Bloom et al., 2006).

However, there are positive signs that change is occurring in the region. According to a 2011 study among SADC countries by the Centre for Higher Education Transformation (CHET), Mauritius, Kenya and South Africa received high ratings for building consensus and developing coordinating agreements at the national level. However, South Africa was “the only country recognized with steering capacity, a stable funding regime and a sustainable ratio of sources of income” (Cloete, Bailey, & Pillay, 2011, 66). In 2012, the World Economic Forum (WEF) ranked South Africa 52nd out of 144 countries in terms of the global competitiveness index which is the highest ranked country in sub-Saharan Africa (Sala-i-Martin & Schwab, 2011). In addition, the WEF lists South Africa as a

Stage 2 efficiency-driven economy (Sala-i-Martin & Schwab, 2011). On the other hand, South Africa exhibits many of the characteristics of a “dual economy” with highly developed urban economies and relatively underdeveloped rural regional economies. Evidence of South Africa’s dual economy is confirmed by its HDI ranking of 123rd place which is 53 positions less than its GDP per capita status (United Nations, 2011). Furthermore, even more universally accepted and non-quantitative measures of inequality such as the Gini coefficient show a negative trend for South Africa as well. The South African coefficient rose from .66 in 1993 to .70 in 2008 with the highest inequality growth in the African community (Swilling & Sebitosi, 2012). Unfortunately, the evidence equates to South Africa being officially the most unequal country in the world (Slamat, Gosa, & Spies, 2012). Additionally the Stellenbosch region, which is introduced later in section 1.2, is potentially one of the most unequal places in the world (Slamat et al., 2012) As a result, policies and programs aimed at reducing inequality should be much more than political propaganda. According to Slamet et al, it is essential for the survival and well-being of every South African citizen (Slamat et al., 2012).

In terms of planning, South Africa has a number of national policy documents related to higher education and development. In the post-apartheid era, the first major policy paper was the Reconstruction and Development Programme that essentially set out a range of economic and social priorities for the new democratically elected government (Bunting & Cloete, 2011). The Reconstruction and Development Programme primarily focused on poverty reduction through addressing previous shortfalls in social services such as housing, water sanitation, electrification, land reform, healthcare and public works. However, the Reconstruction and Development Programme document did not fully address the role of higher education and development specifically (Bunting & Cloete, 2011). Recent national policy documents that recognize the role of higher education in development include the Accelerated and Shared Growth Initiative for South Africa (ASGISA) which attempted to address the shortage of labour skills by upgrading further education and training colleges. In addition, ASGISA’s main objectives were to reduce the unemployment rate to 15 percent by 2014, reduce poverty from one-third to one-sixth of the population also by 2014 and to increase the annual GDP to 6 percent between 2010 to 2014 (Moorosi, 2009). To further supplement ASGISA’s ambitious goals, the Joint Initiative on Priority Skills Acquisition (JIPSA) was launched to promote skills

development and training partnering with among others institutions of higher education (Moorosi, 2009). Other national policy documents such as the Anti-Poverty Strategy for South Africa draft document, the Department of Trade and Industry's Industry Policy Action Plan, the Human Resources Development Strategy, the Medium Term Strategic Framework and the Green Paper on Planning briefly mention higher education as playing a role in development (Bunting & Cloete, 2011).

In terms of implementation, it is "evident even to the casual observer that there is a huge gap between policy development and policy implementation in South Africa" (Cloete et al., 2011, p.1). The lack of implementation and measurement must be addressed before meaningful change can occur between institutions of higher education and development (Bunting & Cloete, 2011). In regards to implementation there is hope, as is the case in many countries, the higher education and development agreements of the federal government are mirrored by those of the sub-national authorities. For instance, in Brazil, China, Canada and the United States, this decentralization leads to competition to attract and retain industries, especially those that generate local employment, exports and added value (Cloete et al., 2011).

Until recently, little was known about local economic efforts and university interaction in southern Africa. A study in 2008 showed that: 58 percent of Southern African Development Communities (SADC) higher education institutions provided examples of collaborative community development programs, 41 percent participated in collaborative projects with business and industry and 59 percent had plans in place for collaboration with industry (Kruss, 2009). Given that most policy implementation occurs at the local or regional level, it is imperative with South Africa's dual economy that more attention must be placed on this under-researched area (Bunting & Cloete, 2011).

The research study was conducted at Stellenbosch University, an internationally ranked and accredited higher education institution located in the Western Cape Province of South Africa. Furthermore, the university's geographic location aided in the research study as it is positioned as the main higher education institution within the geographic region of the Cape Winelands District and recognized as the prominent economic driver in the region (Treasury PGWC Provincial, 2007). This information aided the researcher's

ability to separate university impacts from non-university impacts within the surrounding communities.

It is important to note that the scope of this research was steered through the lens of a higher education institution. In terms of documents, Stellenbosch University was chosen due to their existing community interaction policy and community-municipal interaction agreements. The community interaction agreements give a broad charge to both the university and the municipalities to work together for the social and economic betterment of the community. Specifically, the agreements state that Stellenbosch University and the municipalities of Stellenbosch and Drakenstein will “work in a non-partisan manner with local business and industry, non-governmental and community organizations towards sustainable local economic development” and “the civic infrastructure of the Town in capacity-building and addressing the developmental needs of the Town” (Stellenbosch University, 2007, p.1). Furthermore, Stellenbosch University’s community interaction policy states that the university “strives to be an excellent, relevant and engaged university that commits itself to playing a significant role within South Africa, in Africa and globally through its core functions” (Stellenbosch University, 2013c, p.1). The policy states that community interaction exists as a core function of the university in order to promote and support partnerships with communities. It is important to note that communities are defined by the university as “groups of people united by a common location, or to groups of people that are linked intellectually, professionally, and/or politically; that is, geographic communities, communities of interest and communities of practice” (Stellenbosch University, 2013c, p. 1).

However, it is also essential to point out some of the study’s limitations from the onset. One of the primary limitations of this study relates to the scope. While Stellenbosch University, undoubtedly, has national and international impacts, this study addresses the central research question by focusing on the community interaction agreements between the university and the municipalities of Stellenbosch and Drakenstein. In addition, these communities both had direct community interaction agreements signed with the university and were located in relative close proximity to the university. Another limitation is the type of data collected in terms of measuring the social and economic impact. Much of the data collected in this study is limited to pre-existing metrics located in the public sphere. While this aided the researcher in terms of time and efficiency in

carrying out the study, it also limited the study as well. An additional limitation to the study is the lack of environmental metrics to combine with the social and economic indicators. Although a brief description of the Stellenbosch University's impacts on environmental sustainability is presented based on the book *Sustainable Stellenbosch – Opening Dialogues*, more research is needed on the associated challenges and opportunities that the university has on environmental sustainability.

Nonetheless, in 2007, Stellenbosch University began an impressive series of collaborative development efforts through memorandums of understanding (MOUs) and protocols. The first agreement related to the scope of this study was signed in July 2007 and titled *Stellenbosch: A Sustainable University Town* that outlined a formal partnership between the municipality and the university. The MOU included an agreement to work collaboratively on economic development, addressing the municipality's development needs and setting up joint projects where feasible (Stellenbosch University, 2007). The Stellenbosch Municipality includes the towns of Stellenbosch, Franschoek and Pniel, and the agreement also called for integrating the joint initiatives into the Integrated Development Plan (IDP) of Stellenbosch Municipality (Stellenbosch University, 2007). The next agreement within the scope of this study was signed in 2011 and mirrored the first document to include the municipality of Drakenstein. The municipality of Drakenstein includes the towns of Paarl, Wellington, Saron, Gouda and Simondium (Stellenbosch University, 2011). It is also important to point out that while other interaction agreements between Stellenbosch University and surrounding communities do exist, this study focused specifically on the agreements with the municipalities of Stellenbosch and Drakenstein. The rationale to include only these the two municipalities was based on their proximal location to the university, their unique social composition and the regional economic implications that are described in further detail below.

From a regional viewpoint, the communities surrounding Stellenbosch University are considered a microcosm of South African society in many regards, possibly with somewhat more inequality than found in most municipal areas and slightly less residents living in extreme poverty (Ewert, 2012). The latest official census conducted in 2011 found that the total population of Stellenbosch was estimated to be 155,733 (Statistics South Africa, 2013). However, the actual size of the population in the Stellenbosch municipality is considered to be quite larger at somewhere between 175,000 and 270,000

(Ewert, 2012). Demographically, approximately 52.2 percent of residents are classified as coloured, 28.1 percent Africans, 18.5 percent white and .4 percent Asians (Statistics South Africa, 2013). Additionally, about 75 percent of the population in Stellenbosch speaks the Afrikaans language (Ewert, 2012).

The Drakenstein Municipality is similar to Stellenbosch, with an estimated population of 251,262 people according to the 2011 official census (Statistics South Africa, 2013). Demographically, the municipalities are somewhat comparable, and according to the latest national census statistics in 2011: 62.5 percent of the population was coloured, 22.7 percent African, 13.5 percent white and 1.3 percent classified as other (Statistics South Africa, 2013). Additionally, the Drakenstein Municipality contributed R9.026 billion towards the Cape Winelands District's economy in 2011 and the Stellenbosch Municipality contributed R9.6 billion. As a result, Drakenstein accounted for 31 percent and Stellenbosch 33 percent towards the overall Cape Winelands District economy, making the municipalities the second largest and largest economies in the region (Wesgro, 2013).

It is also significant to note that throughout the initial review of the community interaction agreements between Stellenbosch University and the municipalities, one salient theme of strategic partnerships emerged related to higher education. Strategic partnerships are defined as an organization or company that has an agreement in place to assist or work with another to collectively achieve each other's goals (Cambridge Dictionary Online, 2013). Defined another way, strategic partnerships are win-win relationships that occur when two organizations share assets that will mutually benefit each other. Beyond the initial strategic partnership framework and due to a lack of existing research concerning higher education and local development, little is known about the effectiveness of university interaction agreements on surrounding communities. To overcome this current knowledge gap, this study sought to determine if there is a measurable impact of Stellenbosch University's interaction agreements on the community in the municipalities of Stellenbosch and Drakenstein.

3.2. Research Questions, Aims and Objectives

As discussed in chapter one, the central research question was: “what is the impact of Stellenbosch University community interaction agreements with the Stellenbosch and Drakenstein municipalities on local development?” The central research question led to the following subsidiary research questions:

Subsidiary Research Questions

- I. What are the perceptions of the social and economic impact of the community interaction agreements by municipal and university administrators?
- II. What are the social impacts of the community interaction agreements by project leaders that are actively involved in community interaction programs?
- III. What is the economic impact of the Stellenbosch University interaction agreements in the Stellenbosch and Drakenstein municipalities?

The aim or purpose of this research was to understand the relationship between Stellenbosch University and local development through the analysis of the university’s community interaction agreements with the Stellenbosch and Drakenstein municipalities. As a result of the research questions and purpose of the research, the following research objectives were formulated:

- I. Investigate the impact of the local university interaction agreements in Stellenbosch and Drakenstein through perceptions of municipal and university administrators.
- II. Examine the university interaction agreements through the university’s community interaction database of projects and through the project leaders actively involved in university interaction programs.
- III. Measure the identified university interaction agreements with an economic impact study in the geographic areas of the Stellenbosch and Drakenstein municipalities.

In an effort to respond to the above research questions, the purpose of the research, and the research objectives, a systematic approach or research methodology was used. The following section explores the study design and research method of the study.

3.3. Study Design

Figures 3.1 and 3.2 give a visual account of the planning and design used in the research.

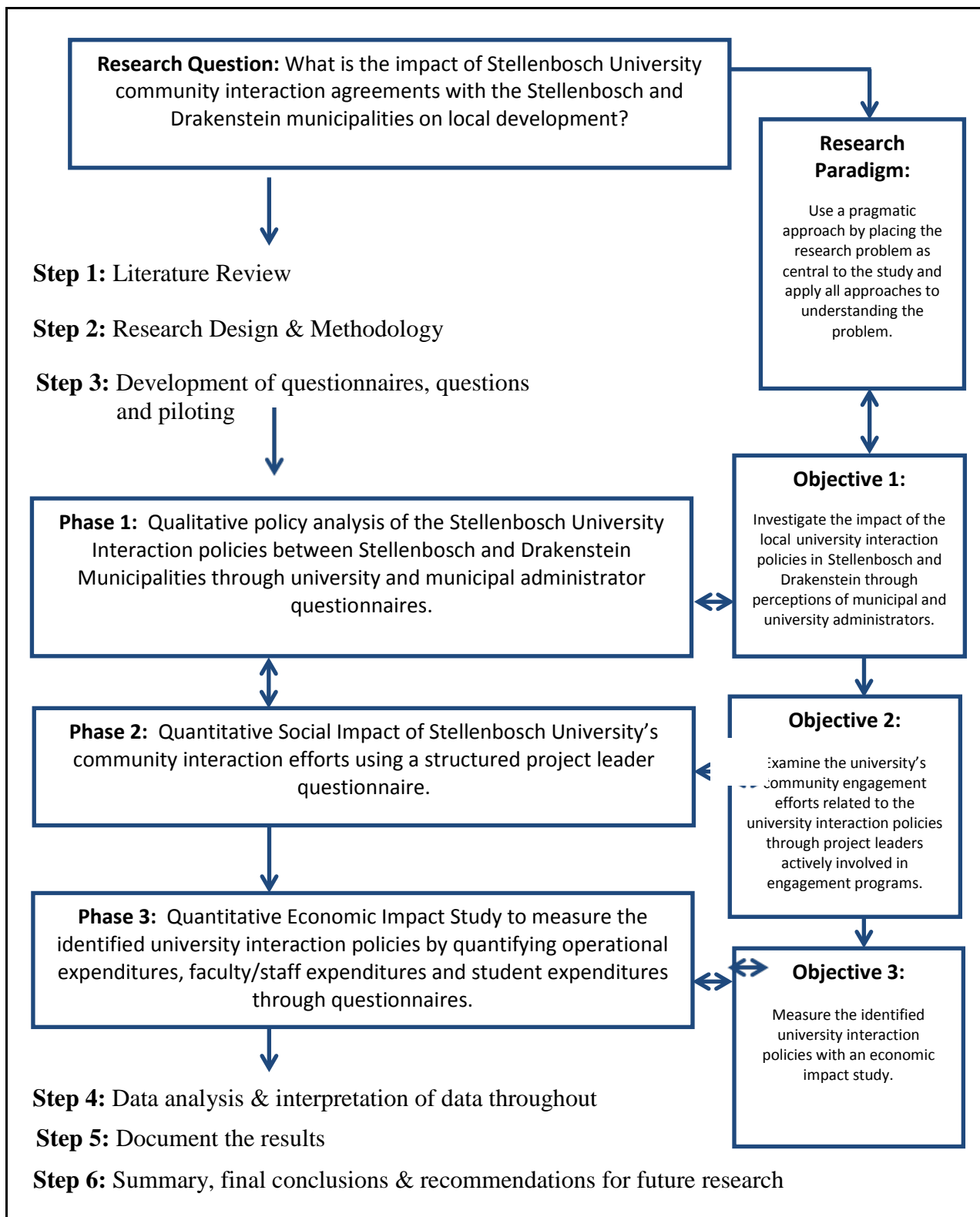


Figure 3.7 A visual display of the study planning.

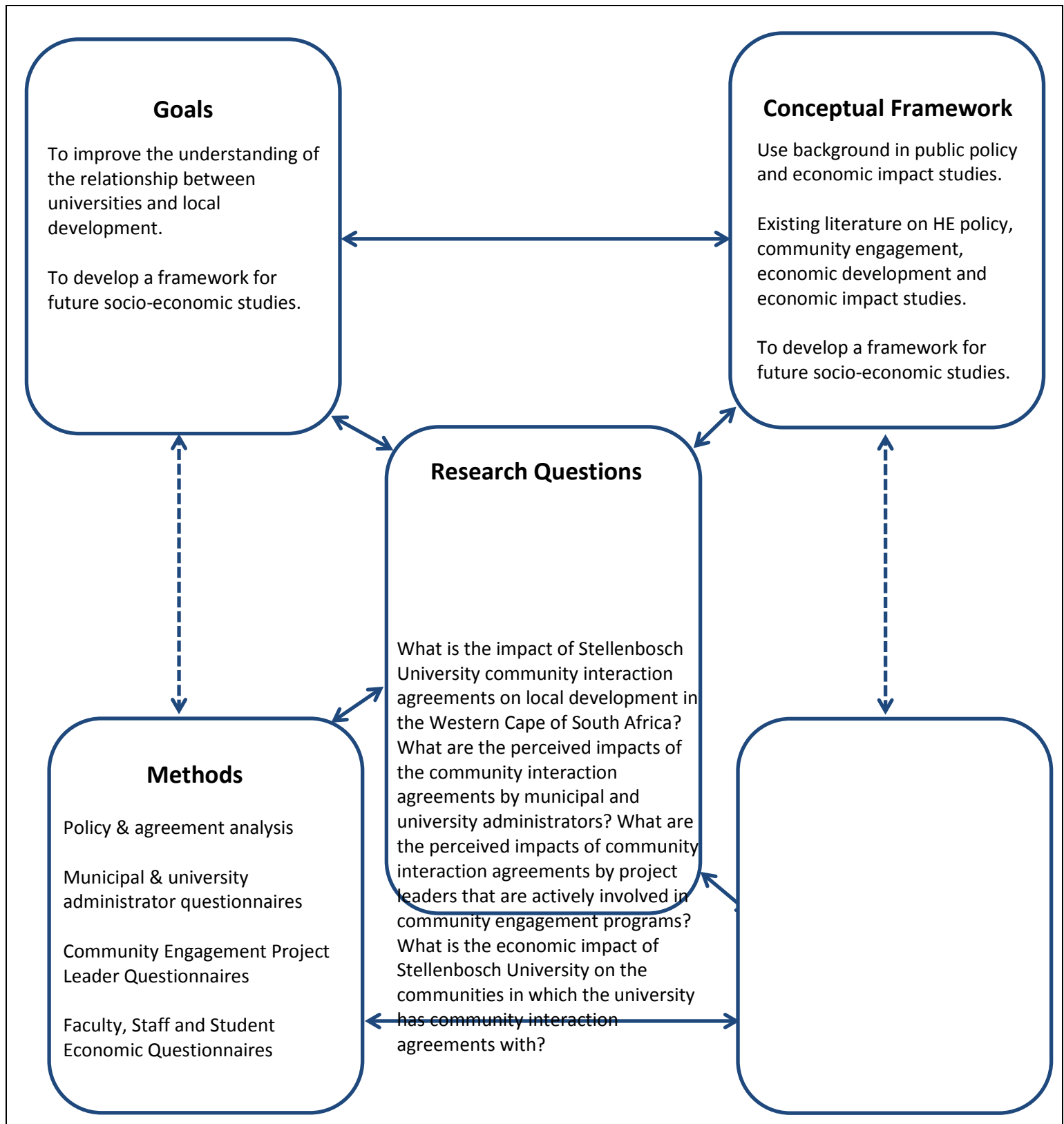


Figure 3.8 A Design Map of the Study

Source: Adapted from (Maxwell, 2012).

3.4. Research Paradigm

A research paradigm helps to offer a lens or worldview that provides a foundation for a research study (Denscombe, 2010). From another perspective, the lens or worldview of a researcher can be defined as a basic set of beliefs that guide action (Guba, 1990, 87). Alternatively, worldviews are the general orientation about the world and the understanding of research that a researcher holds. Worldviews are generally shaped by the discipline area of the student, the views of advisors and faculty within the student’s discipline and past research experiences (Creswell, 2008). The philosophical assumptions originating from the researcher’s worldview offer a foundation for the research perspective, helps to frame the nature of the investigation, assists in the formulation of methods used and research questions asked, points to worthwhile evidence and helps to draw conclusions (Denscombe, 2010).

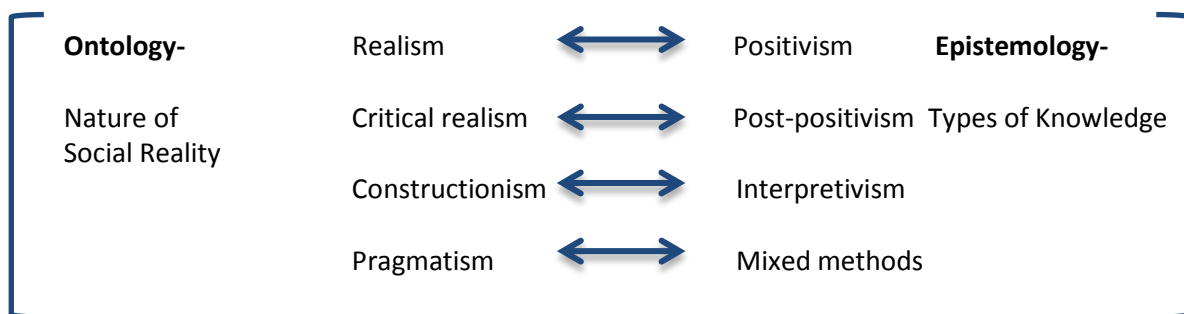


Figure 3.9 A simplified model of the basic research philosophies (Denscombe, 2009)

The research paradigm chosen for this study is known as the pragmatic approach or paradigm. The pragmatic paradigm places the research problem as essential to the study and uses all approaches necessary to understand the research problem (Creswell & Clark, 2007). Although there are multiple variations regarding a pragmatic research philosophy, pragmatism as a paradigm originates from actions, situations and consequences as opposed to existing conditions. Furthermore, with a pragmatic approach, there is a concern with the application of what works and solutions to problems (Patton, 1990). As stated by Creswell and Clark, a pragmatist research approach focuses on the what and how of the research problem (Creswell & Clark, 2007). In essence, it is somewhat

counterintuitive to most research designs by focusing on the research problem and using all approaches to understand the problem as opposed to focusing on a traditional single method approach (Creswell, 2008).

A pragmatic approach has several benefits to the researcher, including allowing freedom of choice. With this approach, researchers are at liberty to choose the various methods, practices and processes that are a best fit for their particular research (Creswell, 2008). In the same way that pragmatists do not see the world in complete agreement, researchers sometimes tend to use multiple tactics for collecting and analyzing data rather than adapting to one way (Teddlie & Tashakkori, 2003). Thus, a pragmatic approach permits multiple methods, different worldviews and different assumptions in addition to variations of data collection and analysis (Creswell, 2008). As a natural outgrowth from the pragmatic approach, a mixed methods research design is discussed in the following section.

3.5. Methodological Design

Drawing on a review of the existing literature and the pragmatic worldview observations of previous studies, the researcher chose a mixed methods research design to assess the impact of Stellenbosch University on regional and local development. Furthermore, the research incorporates an integrated methodologies approach or FraIM developed by Plowright that compliments a mixed method design (Plowright, 2011). This design was chosen so that each of research objectives could be met while compensating for weaknesses inherent with using one method or the other. Furthermore, the combination of methods, along with the FraIM allowed the potential for a design aimed at the research questions.

As far as a mixed method research design, it has experienced a tremendous increase in popularity in recent years and is one of the fastest growing areas in research methodology (Bergman, 2008). Published in 2003, the first comprehensive book on a mixed methods strategy was titled *The Handbook of Mixed Methods in the Social & Behavior Sciences* (Teddlie & Tashakkori, 2003). Since a mixed methods approach is relatively new, it is important first to convey the basic definition and description. Mixed methods research is defined as the mixture of at least one qualitative and quantitative component in one research study (Bergman, 2008). In addition, the research problems addressed by

researchers may be too complex to address with the use of only quantitative or qualitative research (Creswell, 2008). According to Creswell and Clark, a mixed method approach involves much more than simply analyzing two different types of data. By using both research approaches together, a researcher can contribute to the overall strength of the study as opposed to using qualitative or quantitative research alone (Creswell & Clark, 2007).

Mixed methods approaches began as a way of triangulating different data sources and have gained popularity by employing a combination of quantitative and qualitative approaches which have gained perceived legitimacy in social and human sciences (Teddlie & Tashakkori, 2003). The term triangulation first appeared in social research during the 1950's in Campbell and Fiske's discussion of the validation of measurement instruments (Bergman, 2008). For the purposes of this study, triangulation is defined as the researcher's inspection of the understanding of the validity of a single source of data with at least one other source of a purposefully different type (Bergman, 2008). According to Maxwell, the strategy of triangulation helps to reduce the risk of systematic bias or limitations of one particular method in order to gain a broader perspective and better understanding of the research issues (Maxwell, 2012). As a result, a concurrent triangulation strategy was used in the study to determine the overall impact of the Stellenbosch University interaction agreements. The concurrent embedded design includes the collection of qualitative and quantitative data simultaneously then compares the two data sets for convergence, dissimilarities or a combination of both (Creswell, 2008). In this study, the quantitative and qualitative data collected was weighted equally serving as the primary data sources. The mixed method concurrent triangulation design used for this study is depicted in figure 3.4.

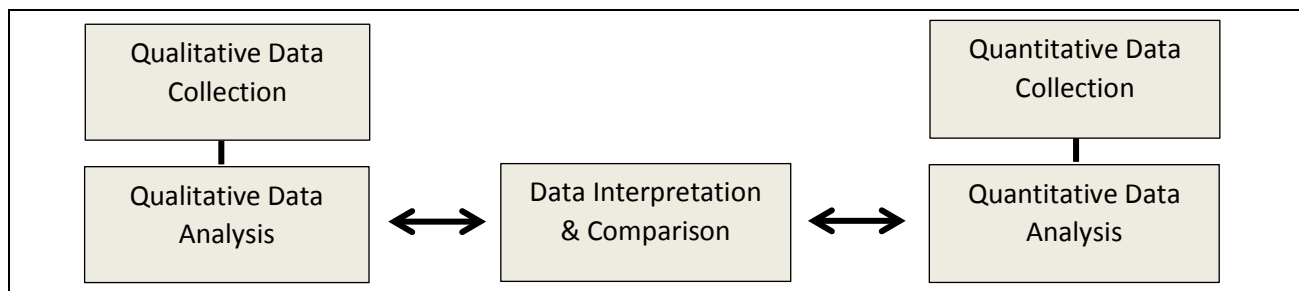


Figure 3.10 Mixed method concurrent triangulation design (Bergman, 2008)

However, mixed methods approaches do have critics and can cause challenges for the inquirer including the potential for massive amounts of data collection along with extensive analyzing of numeric and textual data (Creswell, 2008). Furthermore, the approach requires the researcher to be familiar with both qualitative and quantitative research methods (Creswell, 2008). Critics also point out that many researchers use a mixed method approach in order to create a form of methodological triangulation. Many times, however, the researcher may use a triangulation approach to overcome the limits of one type of data while risking the under-analysis of another type of data. Likewise, many theoretical perspectives suggest that data cannot be simply aggregated to form some overall research truth (Silverman, 2009).

Another criticism by Bergman (2008), states that beyond mixed method challenges of data collection and integration there are also methodological framework issues. The issues tend to exist between the two major design options of merging the data in a concurrent way or to have the data build on itself in a sequential way. To overcome this, the researcher adopted the previously discussed concurrent embedded design from the onset to guide the mixed method data collection and integration process.

Beyond the customary conceptualization of mixed methods, Plowright (2011) offers a new integrated methodologies or FraIM approach. The FraIM approach rejects the traditional dichotomy between qualitative and quantitative methods to help overcome some of the associated weaknesses of mixed methods. Furthermore, it argues for a series of frameworks aimed at combining the integration of various research process fundamentals to ensure the effective and successful study of the phenomena within the research question.

From a methodological perspective, the FraIM argues that once a research question has been established, there are three types of methods for data generation and collection.

According to research conducted by Plowright (2011), the three methods include observation, asking questions and artifact analysis. The first method includes observation which can consist of both covert and overt observing of behavior. The second method includes asking questions that can range from highly structured questionnaires to open ended self-administered questionnaires. The final method includes artifact analysis that refers to a wide range of objects, materials or events that are produced by people. Figure 3.5 below visually explains the FraIM methods and data analysis design.

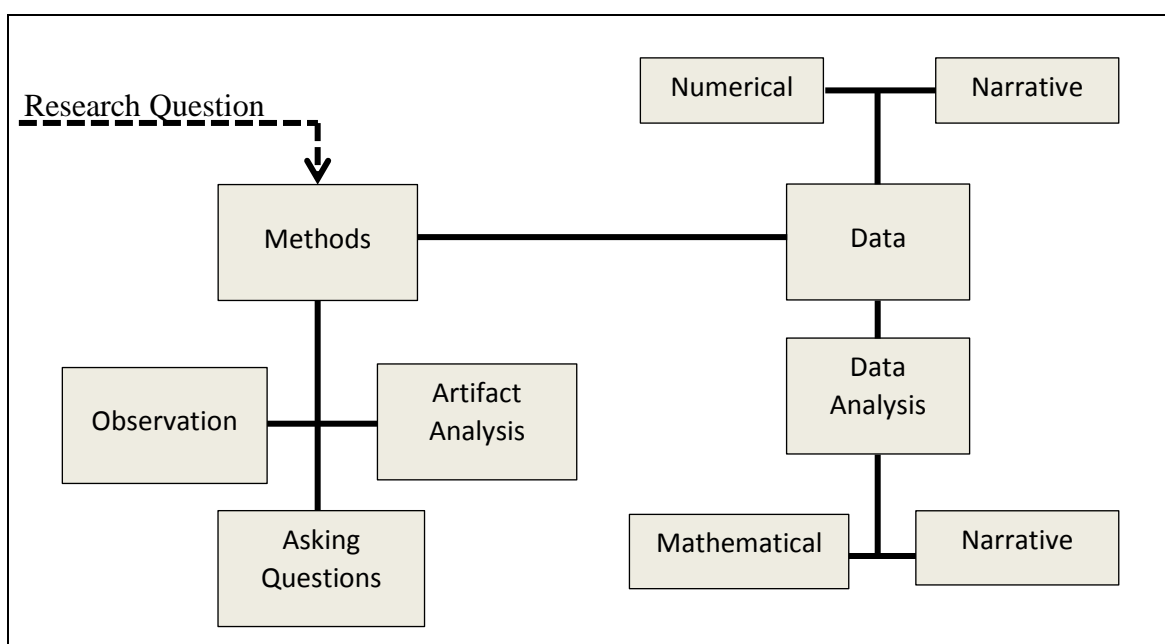


Figure 3.11 FraIM methods and data analysis design (Adapted from Plowright, 2011)

It is important to note that the visual representation of methods within the FraIM was not by coincidence, but corresponds directly to the level of mediation for each method. Within the FraIM, the level of mediation is defined as the proximal researcher's location relative to the subject under study. On one end of the continuum, observations have a relatively low level of mediation as the researcher is commonly close to the issue being studied. However, artifact analysis tends to have a high level of mediation as the researcher is much further away in both time and space from the subject being studied. Furthermore, within each method is the issue of the degree of structure which determines the pre-structuring of collected data (Plowright, 2011). At one end of the continuum, a low degree of structure often results in a lower level of predictability, a lower level of

pre-structuring data and open coding while a high degree of structure leads to the opposite. Within the different levels of mediation and degrees of structure, there is no right or wrong answer. However, each choice the researcher makes raises different issues when carrying out research within the FraIM (Plowright, 2011).

For the purposes of this study, the researcher first asked questions using less structured questionnaires. These questionnaires used an open-ended format allowing responders a high degree of control over the direction of the research and the information disclosed (Plowright, 2011). Additionally, within phase one, the researcher employed a highly structured theme analysis of the community interaction agreements or artifacts to define the impact of Stellenbosch University.

In phase two, the researcher used a more structured questionnaire with community interaction project leaders to determine the impact. However, the questionnaire included a mixture of open-ended and closed questions to allow responders to retain control over the direction of the research. Phase two also included a highly structured analysis of various artifacts describing the university's community interaction projects. These artifacts included the university's community interaction database, annual report and website.

To measure the economic impact in the final research phase, a highly structured questionnaire was used to provide the researcher with greater predictability over the data collected. The high degree of predictability was deemed essential to making inferences regarding the spending habits of all students, faculty and staff. In addition, phase three included a highly structured analysis of various artifacts describing the university's economic impact. These artifacts included the university's annual report, website and various other publications. Further discussion of each research phase is outlined in section 3.7.

In conclusion, by choosing a mixed methods approach, researchers need not use one method over the other (Babbie, 2010). In fact, the two approaches have more similarities than differences, with both methods being useful and legitimate depending on the research being conducted (Babbie, 2010). Furthermore, by using the framework for an integrated methodology or FraIM approach, a researcher may determine the strategies, approaches and activities used to successfully complete a research project (Plowright, 2011).

3.6. Procedural Plan

Before beginning the study, it was important first to examine and plan the procedures within the research methodology. A procedural plan, also known as the research design, is implemented to answer questions objectively, accurately and economically (Kumar, 2011). In a mixed methods study, there are four important aspects to consider including: timing, weighting, mixing and theorizing (Creswell & Clark, 2007). The following section explores these four important aspects in relation to this study.

The timing of data collection is one of the first aspects to consider (Bergman, 2008). Will the data collection be done in phases sequentially or gathered at the same time concurrently? According to Creswell, either the qualitative or quantitative can come first when data is collected in phases (Creswell, 2008). Normally when qualitative data is collected first, the purpose is to help prove causality and expand on the understanding through a second phase normally involving a quantitative approach (Kumar, 2011). However, if the data collection phase is time constrained the researcher may consider implementation concurrently. For example, a researcher studying student behaviour in a particular classroom may consider collecting quantitative and qualitative data at the same time due to limitations in the length of the academic semester. In addition, for studies involving long distance field research it may be more manageable for the researcher to collect all the data at one time versus revisiting the field multiple times for data collection (Creswell, 2008). In regards to timing, this study was conducted sequentially with phases one and two investigating the impact of the university interaction agreements from the standpoint of higher education administrators, municipal administrators and community interaction project leaders. Next, phase three was conducted to determine the economic impact of students, faculty and staff.

Another issue for the researcher to consider is the weight or significance given to both the qualitative and quantitative data. Will priority be given to one type of data over the other or will they be equal? According to Creswell, deciding upon the priority given to qualitative or quantitative data depends on the interests of the researcher, the study audience and what the researcher seeks to highlight in the research (Creswell, 2008). In a mixed methods study, weight is generally determined by the order in which the qualitative and quantitative data is presented, the amount of use of a particular data type

and the type of approach either deductive or inductive (Bergman, 2008). For the purposes of this study, both the quantitative and the qualitative data sets were weighted equally. In practice, the study gathered multiple data types and sources related to determining the impact of the agreements. As a result, the quantitative data sets were given higher importance due to time constraints and in order to increase the sample size of the study.

A third issue to contemplate in regards to procedures is the mixing of data. This is a difficult issue to resolve because, inherently, qualitative data tends to be text and quantitative data tends to be numerical values (Creswell, 2008). The process essentially involves discussing the mixing of data by asking a two part question. When does the researcher mix data and how does the mixing occur? The first part of the question is fairly straightforward to answer as data can be mixed at the collection, analysis or interpretation stages or at all three (Bergman, 2008). The second part of the question involving when the mixing occurs has received considerable attention in the literature (Creswell & Clark, 2007). In mixed methods research, data can be essentially mixed in three different ways including connecting, integrating and embedding the data (Creswell, 2008). Connecting the data refers to linking the analysis in the first phase with the second phase of the research. While integrating the data refers to the actual combining of qualitative and quantitative records (Bergman, 2008). Finally, embedding refers to using a primary form of data and inserting a secondary form of data as a supportive role (Creswell, 2008). For example, the primary form of data may be quantitative questionnaires supported by qualitative interviews. For this study, mixing occurred at all three stages and the data was embedded in order to better answer the research question. The data sets were also connected by linking the analysis in all three phases to answer the overall impact of the Stellenbosch University interaction agreements.

A final topic to address regarding procedures is the use of theory. A theoretical lens or perspective is another way to describe theory in a mixed methods study. Sometimes, a theory is tested as part of the qualitative and quantitative design of a mixed methods study (Creswell, 2008). According to Mertens (2003), studies have been developed that use mixed method designs to investigate gender, disability, race, sexual orientation or other areas of diversity. As previously discussed in section 3.4, the research theory that was chosen for this study is known as the pragmatic approach or paradigm. The

pragmatic paradigm places the research problem as essential to the study and uses all approaches necessary to understand the research problem (Creswell & Clark, 2007).

3.7. Research Phases

Research phases are logical steps that the researcher must take in order to systematically address the research problem, gather data and present findings or results (Creswell & Clark, 2007). Throughout the study, the researcher sought to develop a system of research that could be replicated by others for future research. A detailed research phase process is important for the concepts of validity and reliability which are discussed later in section 3.9. Table 3.1 below summarizes the three phases of the data collection and analysis.

Table 3.3 Summary of the three phases of data collection and analysis

Research Phase	Data Source	n	Method of Data Collection	Data	Appendix/Reference
1	Community Interaction Documents	2	Theme Analysis	Narrative	L&M
	Municipal Admin (Stellenbosch & Drakenstein)	6	Questionnaire	Mixed	E
	University Staff	3	Questionnaire	Mixed	E
2	Project leaders	20	Questionnaire	Mixed	G

	Community interaction database; community interaction annual report; <i>Sustainable Stellenbosch</i> book; SU HOPE Project; CI Flagship Projects, School Partnership Report	6	Highly Structured Analysis	Mixed	Ref: Stellenbosch University Division for Community Interaction. (2013b); Ref: Stellenbosch University Division for Community Interaction. (2012) ; Ref: Swilling, M., Sebitosi, A., & Loots, R. (2012); Stellenbosch University. (2013d); Stellenbosch University, 2013a; Stellenbosch University Division for Community Interaction, 2013
3	Stellenbosch University 2012 annual report; Stellenbosch University Division for Institutional Research and Planning institutional data; community interaction annual report; Innovus 2012 annual report	4	Highly Structured	Numerical	Ref: Stellenbosch University, 2013b); Ref: Stellenbosch University Division for Institutional Research and Planning. (2013); Ref: Stellenbosch University Division for Community Interaction. (2012);Ref: Innovus. (2013).
	Students	477	Self-administered Questionnaire	Numerical	K
	Staff	245	Self-administered Questionnaire	Numerical	I

3.7.1 Community Interaction Agreements Phase

The first phase included questionnaires and a theme analysis of the community interaction agreements to assess the impact of the university. The researcher first asked questions using less structured questionnaires. These questionnaires used an open-ended format permitting participants a relatively high degree of control over the information disclosed (Plowright, 2011). Furthermore, the researcher employed a highly structured theme analysis of the community interaction agreements or artifacts to define the impact of Stellenbosch University.

3.7.1.1. Scope

In terms of scope, this phase sought to determine if there is a measurable impact of Stellenbosch University's interaction agreements with the municipalities of Stellenbosch and Drakenstein. When discussing the theme analysis scope, it is also important to define the specific evaluative criteria or the policy objectives that will be used to determine the merits of existing agreements. The most common types of policy objectives include: effectiveness, efficiency, outlays, benefits, uncertainty, administrative and political feasibility, equity, freedom, legality and constitutionality (Kraft, 2010). However, effectiveness, efficiency and equity are regarded as the most politically significant criteria to evaluate policy proposals today (Kraft, 2010). As a result, for the purposes of this phase, the researcher focused on effectiveness, efficiency and equity.

Effectiveness is universally important to all policy proposals concerning how well they work. For this phase, a list of quantifiable indicators for the agreement objectives was developed and will be discussed later in the questionnaire section. Another universally important objective is policy efficiency which is defined as a means to justifying government action on the foundation of economic theories (Kraft, 2010). From a higher education perspective, the university's fiscal resources must be used to increase the well-being of society (Weimer & Vining, 2005). For the purposes of determining policy efficiency in this phase, an impact assessment method was used in developing the questions in the questionnaire section. The final politically important evaluative tool is equity. According to Kraft and Furlong, the term has two different meanings in process equity and outcomes equity. Process equity refers to how voluntary, fair and open the

decision making process was regarding the creation of the policy (Kraft, 2010). Outcomes equity examines the results and ultimately if because of the policy some citizens fare better than others regarding education, employment income, housing and so on (Kraft, 2010). This phase focused on the concept of outcomes equity and a set of questions related to outcomes equity was incorporated into the questionnaires.

This phase also included questionnaires to gather information from municipal administrators, university administrators and community leaders regarding the impact of the development agreements between Stellenbosch University and the surrounding local governments. The participant selection criteria and questionnaires are discussed in greater detail in the following sections.

3.7.1.2. Participants Selection

Municipal administrators, university administrators and community leaders were among the participants chosen for to answer questionnaires. For this phase, both purposive or criterion based sampling was used (Maxwell, 2012). Purposive sampling was used to allow the researcher to select participants with specific knowledge of the agreements to represent the study population (Berg, 2004). Furthermore, this strategy was used to allow the researcher to obtain information from particular settings, persons or activities that would not be available using other sampling choices (Maxwell, 2012). This was viewed as an appropriate method to combine with purposive sampling in this phase due to the availability of some senior level administrators and community leaders identified. In the case of limited availability, the researcher used recommended sub-senior level staff members with extensive knowledge of the community interaction agreements to complete the questionnaires on behalf of the department or organization. Figure 3.6 outlines the selection criteria for the participants in phase one of the study.

Selection Criteria for Participants in Phase 1

Questionnaire A for Municipal Administrators

Inclusion Criteria:

- 1.) Full-time municipal employees of Stellenbosch and Drakenstein.
- 2.) Mid-level managers and above as defined by the municipality's organizational chart.
- 3.) Employees that were proficient in English or Afrikaans.
- 4.) Employees who were voluntarily willing to participate in the study.
- 5.) Employees with at least some prior knowledge of the university interaction policies.

Questionnaire A for Faculty & Staff

Inclusion Criteria:

- 1.) Full-time university employees of Stellenbosch University.
- 2.) Mid-level staff/faculty and above as defined by the university's organizational chart.
- 3.) Staff and faculty that were proficient in English or Afrikaans.
- 4.) Staff and faculty that were voluntarily willing to participate in the study.
- 5.) Staff and faculty with at least some prior knowledge of the university interaction policies.

Figure 3.12 Selection criteria for participants in phase 1

After consulting with the researcher's promoter, a list of university and municipal administrators and community leaders were identified as possible participants in the study. As a result, for this phase both purposive or criterion based sampling was used (Maxwell, 2012). Purposive sampling was used to allow the researcher to select participants with specific knowledge of the agreements to represent the study population

(Berg, 2004). This was viewed as an appropriate method to combine with purposive sampling in this phase due to the availability of some senior level administrators and community leaders identified. All participants including community leaders, university administrators and municipal administrators issued their voluntary consent in order to participate in the study. In addition, all administrators and community leaders met the selection criteria for participants in phase one.

A total of six municipal administrators and community leaders were sent questionnaires with each municipality receiving three questionnaires. Furthermore, a total of three higher education administrators and community interaction leaders were sent questionnaires regarding the impact of the community interaction agreements between Stellenbosch University and the surrounding local governments. Of the municipal administrators sent questionnaires, four were identified as senior level staff, and two were identified as community leaders associated with the agreements. Of the higher education administrators sent questionnaires, two were identified as senior level staff and one was identified as a community interaction leader.

3.7.1.3. Questionnaires

According to Weimer and Vining (2005), agreements and programs usually have multiple goals and objectives where some succeed and others fail. Also complicating the process is the fact that policy objectives have variable lengths with some short-term outcomes and long-term outcomes. To overcome these obstacles, the researcher sought to align the following questions based on the literature review with the multiple short term and long term goals of the original agreements.

Additionally, the questionnaire was designed using applied survey sampling techniques in order to accurately represent the population being surveyed (Ornstein, 2013). The researcher took into account methods regarding writing survey questions, different modes of sampling, piloting and strategies to increase response rates. As a result, the questionnaire incorporated mostly open-ended questions in order to provide for a greater level of discovery (Gillham, 2000). Furthermore, attention was given to presenting a logical and developmental ordering of the questions along with consideration for the tone and balance of the questions (Ornstein, 2013). Piloting of the questionnaire was conducted in order to make needed revisions and increase the response rate (Gillham,

2000). The questionnaire pilot or pretest was designed to detect and solve problematic questions prior to actual data collection (Ornstein, 2013).

The following contains each of the questions along with an in-depth justification and aim that each question sought to address.

Question 1: Discuss the Memorandum of Understanding (MOU) with Stellenbosch University regarding university interaction with the local community and why you feel it is important?

The aim of this question was twofold. The first aim was to identify the respondent's familiarity with the interaction agreements without overtly questioning their level of knowledge and potentially placing the respondent on edge (Gillham, 2000). The second part of the question sought to obtain information regarding the respondent's perceptual level of importance given to the agreement.

Question 2: Explain if you can about the importance of formalizing regular meetings between the rector & mayor? How many meetings have occurred since the MOU went was signed?

The aim of this question was to measure the level of effectiveness regarding if the stated goals and objectives are being met (Kraft, 2010). Formalizing regular meetings was stated as a goal of the MOU and thus was included as a quantifiable indicator for the agreement. As a result, this question attempted to determine perceptual importance of the meetings, provide insight into meeting discussions and quantify the number of meetings held.

Question 3: What programs have been established to “address capacity-building and development needs through the intellectual capital of the University and civic infrastructure of the Town? What were the type and target population of the programs?”

Similar to question 2, the aim of this question was to measure the level of effectiveness regarding if the stated goals and objectives are being met (Kraft, 2010). However, this question also focused on the efficiency and equity of the agreement. Establishing programs to address capacity-building and development needs through the intellectual capital of the University and civic infrastructure of the town was stated as a goal of the MOU and thus was included as a quantifiable indicator for the agreement. As a result,

this question attempted to quantify the number, type and target population of the programs that were established.

Question 4: Explain more about the importance of the joint university-community interaction projects and who you feel benefits from them? Can you give examples both community and economic development related?

Similar to question 3, the aim of this question was to measure the level of effectiveness, efficiency and equity regarding if the stated goals and objectives are being met (Kraft, 2010). Establishing joint university-community interaction projects was stated as a goal of the MOU and thus was included as a quantifiable indicator for the agreement. Accordingly, this question attempted to gauge the respondent's perceived level of importance, test the respondent's perceived reciprocity of the projects and provide examples for future use by the researcher.

Question 5: Have the initiatives or projects been incorporated into the Integrated Development Plan (IDP) of the Municipality? If so, how many and when?

The aim of this question was to measure the level of effectiveness regarding if the stated goals and objectives are being met (Kraft, 2010). Incorporating the initiatives or projects into the Integrated Development Plan (IDP) of the Municipality regular meetings was stated as a goal of the MOU and thus was included as a quantifiable indicator for the agreement. As a result, this question attempted to determine if the projects had been incorporated into the Integrated Development Plan (IDP) of the Municipality, quantify the number projects incorporated and the timing of the incorporation.

Researchers and colleagues participated in the pilot study regarding the municipal and university administrator questionnaire. The electronic questionnaire was sent along with a note requesting feedback regarding any confusing questions, language issues, or other concerns that could negatively impact the study. These researchers and colleagues did not form part of the study sample population. Based on feedback from the pilot participants, the questionnaires were revised with additional language editing that was needed for the translation into Afrikaans. A professional language editor from Stellenbosch University was located and contracted to make the necessary revisions.

After the piloting corrections were made, the previously identified participants were administered the questionnaire. A general information leaflet was compiled that

explained the purpose of the study, ethics approval, participant rights, confidentiality and additional contact information. The document emphasized the importance of the study and requested their voluntary participation. The general information leaflet, consent forms and questionnaire were sent electronically to all nine identified participants. Follow-up emails were sent after one week and another after two weeks as the initial questionnaire response was low.

Questionnaires for municipal and university participants were conducted based on the questionnaire schedule. The data was collected over a period of three months from August 2013 through October 2013. Most of the data was collected via the online questionnaires.

3.7.2 Social Impact Phase

The next phase of the study documented the university's community interaction efforts through social impact. Stellenbosch University uses the term "community interaction" as opposed to the more common term of "community engagement" to emphasize the reciprocal relationship between the community and the university (Stellenbosch University, 2013c). For the purposes of this study, the terms are used interchangeably. In addition, the term community interaction is used in the broadest sense of interactions between the university and community (Stellenbosch University, 2013c). As previously mentioned, it is important to note that communities are defined by the university as "groups of people united by a common location, or to groups of people that are linked intellectually, professionally, and/or politically; that is, geographic communities, communities of interest and communities of practice" (Stellenbosch University, 2013c).

In this phase, the researcher used a structured questionnaire with community interaction project leaders to determine the social impact. The questionnaire included a mixture of open-ended and closed questions to allow responders to retain control over the direction of the research. This phase also included a highly structured analysis of various artifacts describing the university's community interaction projects. These artifacts included the university's community interaction database, annual report, books and website. Overall, this phase sought to examine Stellenbosch University's community interaction efforts to triangulate responses from the first phase.

3.7.2.1. Scope

Similar to phase one in terms of scope, this section sought to determine if there was a measurable impact of Stellenbosch University's interaction agreements in relation to the community impact with the municipalities of Stellenbosch and Drakenstein. When discussing the community impact scope, the specific evaluative criteria or the objectives of Stellenbosch University's interaction agreements with the municipalities of Stellenbosch and Drakenstein guided the discussion. As with phase one, the researcher focused on effectiveness, efficiency and equity as the most politically important standards related to the university's community impact (Kraft, 2010).

As previously noted, the first evaluative criterion was effectiveness and relates to whether the stated goals and objectives are being met. For this phase, a list of quantifiable indicators for the community impact objectives was developed and will be discussed later in the questionnaire section. Policy efficiency is defined as a means to justifying government action on the foundation of economic theories (Kraft, 2010). For the purposes of determining efficiency in this phase, an impact assessment method was used in developing the questions in the questionnaire section. The final politically important evaluative tool is equity. Process equity refers to how voluntary, fair and open the decision making process was regarding the creation of the policy (Kraft, 2010). Outcomes equity examines the results and ultimately, if because of the policy, some citizens fare better than others regarding education, employment income, housing and so on (Kraft, 2010). This phase focused on the model of outcomes equity related to the university's goal of reciprocity, and a set of questions related to outcomes equity was incorporated into the questionnaire.

3.7.2.2. Participants Selection

Questionnaires were used in this phase to gather information from project leaders actively involved in university interaction programs, human capital development initiatives and contributions to a knowledge-based economy to triangulate responses from the phase one policy analysis. Resembling phase one, purposive or criterion-based selection was used (Maxwell, 2012). Purposive sampling was used to allow the researcher to select participants actively involved in university interaction programs (Berg, 2004). The criterion-based sampling was used to allow the researcher assess to the participants based their knowledge and availability (Maxwell, 2012). This was viewed as a suitable process

to combine with purposive sampling due to the availability of the project leaders identified in the community interaction database. Figure 3.7 outlines the selection criteria for the participants in phase two of the study.

Selection Criteria for Participants in Phase 2

Questionnaire A for Project Leaders

Inclusion Criteria:

- 1.) Full-time or part-time project leaders as identified in Stellenbosch University's Community Interaction Database.
- 2.) Adults 18 years of age or older as specified by DESC proposal.
- 3.) Actively involved in a university community interaction project or program.
- 4.) Participants that were proficient in English or Afrikaans.
- 5.) Participants who were voluntarily willing to participate in the study.

Figure 3.13 Selection criteria for participants in phase 2

Project leaders actively involved in university interaction programs and initiatives were identified as possible participants to measure the community impact. The researcher used the contact information provided in the 2012 community interaction project database to develop the list of participants. As a result, both purposive and convenience sampling

were used again similarly to phase one. Purposive sampling was used to allow the researcher to select participants actively involved in university interaction programs (Berg, 2004). Convenience sampling was used to allow the researcher assess to the participants based their availability (Babbie, 2010). This was viewed as a suitable process to combine with purposive sampling due to the unknown availability of the participants identified. All the project leader participants gave voluntary consent in order to participate in the study. In addition, all project leaders completing the survey met the selection criteria for participants.

A total of 152 community interaction projects were identified in order to meet a target confidence interval and a confidence levels. As many projects were listed under the same project leader, a total of 77 project leaders were sent questionnaires representing the 152 separate projects. Project leaders representing more than one project in the database were requested to complete a questionnaire for each project by using the 'submit another response' icon provided.

3.7.2.3. Project Leader Questionnaire

According to Weimer and Vining, agreements and programs usually have multiple goals and objectives that have variable lengths in terms of outcomes (Weimer & Vining, 2005). The researcher employed the standards of effectiveness, efficiency and equity to align the following questions based on the literature review along with the multiple objectives of the community interaction agreements. The questionnaire incorporated open-ended and closed-ended questions where responses were based on multiple predetermined answers and attention was given to presenting a logical developmental ordering of the questions to increase data quality (Gillham, 2000). Additionally, the questionnaire was piloted along with follow-up reminders sent to increase the overall response rate. Furthermore, a Likert scale survey was deployed to collect ordinal data to measure the perceptions of the project leaders involved in community interaction programs (Sue & Ritter, 2011). The following contains each of the questions along with an in-depth justification and aim that each question sought to address.

Question 1: Please list the name of the community interaction project, program or initiative that you are involved in. [blank]

This question was designed to attach the respondent's completed survey with the correct project during data analysis.

Question 2: The Stellenbosch University community interaction project, program or initiative that I am involved with has a measurable community or economic impact.

Strongly Agree Agree Neutral Disagree Strongly Disagree

The aim of this question was to measure the respondent's perception of importance for the Stellenbosch University interaction project, program or initiative they are participating in within the scope of this study.

Question 3: Based on your response to the previous question, if you felt the Stellenbosch University community interaction projects, programs or initiatives that you are involved with have a measurable impact please explain how they have an impact: [blank]

The goal of this question was to allow the respondent to provide more detail regarding their perception of importance for the Stellenbosch University interaction project, program or initiative. Critics of the Likert scale or ordinal data sets often point to the fact that distances between responses are not always the same and the heavy reliance on predetermined responses (Gillham, 2000). In order overcome the weakness of a traditional Likert scale, the researcher included a follow-up question to allow the respondents to explain the measurable impact to increase data richness and quality (Sue & Ritter, 2011).

Question 4: Stellenbosch University's community interaction project, program or initiative that I am involved with primarily benefits Stellenbosch University students, faculty and staff.

Strongly Agree Agree Neutral Disagree Strongly Disagree

The aim of this question was to test the intended equity of the interaction agreements. Critics have historically viewed community engagement activities as paternalistic in nature and one-way approaches to the community (Weerts & Sandmann, 2010). This question tests the project leader's perception of reciprocity between the university and the community.

Question 5: The Stellenbosch University community interaction project, program or initiative that I am involved with primarily benefits the community defined as "groups of

people united by a common location, or to groups of people that are linked intellectually, professionally, and/or politically; that is, geographic communities, communities of interest and communities of practice.”

Strongly Agree Agree Neutral Disagree Strongly Disagree

Again, the purpose of this question was to again test the intended equity of the interaction agreements. As previously noted, critics have viewed community engagement activities as paternalistic and one-way approaches to the community (Weerts & Sandmann, 2010). This question tests the project leader’s perception of reciprocity between the university and the community.

Question 6: There is a mutual benefit and sense of reciprocity between the Stellenbosch University community interaction projects, programs or initiatives that I am involved in and the community defined as “groups of people united by a common location, or to groups of people that are linked intellectually, professionally, and/or politically; that is, geographic communities, communities of interest and communities of practice.”

Strongly Agree Agree Neutral Disagree Strongly Disagree

This question was the final Likert scale model question designed to test the intended mutual benefit and reciprocity of the interaction agreements. This question tests the project leader’s perception of mutual benefit and reciprocity between the university and the community.

Question 7: Based on the reported number of people estimated in your primary group target, please share how many actual people participated in 2012. []

The aim of this question was to cross-triangulate primary target group participation in the university’s community interaction projects. The community interaction project database contained reporting information for initial primary target population only and this question sought to determine if initial primary target group estimates matched actual results.

Question 8: Based on the number of people estimated in your secondary group target, how many actual participants were there in 2012? []

Similar to the previous question, the goal was to cross triangulate secondary target group participation in the university’s community interaction projects. The community

interaction project database contained reporting information for initial secondary primary target population only and this question sought to determine if initial secondary target group estimates matched actual results.

Question 9: Is the primary or secondary group target of your project located in a township as defined by a racially segregated and/or socio-economically disadvantaged community (ex. Kayamandi, Mbekweni, etc)?

Yes No

This question was designed to determine how many of the community interaction projects targeted racially segregated and socio-economically disadvantaged communities. The researcher identified this metric as an important one based on the community needs and transformation objectives outlined in the community interaction agreements.

Question 10: Please estimate the total cost of providing the community interaction project in terms of non-university paid or volunteer market wages, materials, transportation costs, etc for 2012. [blank]

This question was designed to capture the estimated cost of providing the community interaction project. This information was important to collect because costs including non-university paid or volunteer market wages, materials, transportation costs are often not captured as part of overall community interaction project.

A pilot study was conducted for phase two using researchers and colleagues once again for the community interaction project leader questionnaire. The electronic questionnaire was sent along with a note requesting feedback regarding any confusing questions, language issues, or other concerns that could negatively impact the study. These researchers and colleagues used in the pilot study did not form part of the study sample population. Based on feedback from the pilot participants, the questionnaires were revised regarding additional Afrikaans language editing. A professional language editor from Stellenbosch University was again contracted to make the necessary revisions.

After corrections were made based on feedback from the pilot study, the earlier noted phase two participants were administered the questionnaire. Once again, a general information leaflet was compiled that explained the purpose of the study, ethics approval, participant rights, confidentiality and additional contact information. Additionally, the

document explained the importance of the study and requested their voluntary participation. The general information leaflet, consent forms and questionnaire were sent electronically to all 77 identified participants. Follow-up emails were sent after one week and another after two weeks as the initial questionnaire response was low. In some instances, the researcher fielded emails and calls regarding more information about the study's aims and objectives. The questionnaires for the community interaction project leaders were conducted based on the schedule. The data was collected over a period of 3 months from August 2013 through October 2013. All of the data was collected via the online questionnaires.

3.7.3 Economic Impact Study Phase

The community interaction agreements between Stellenbosch University and the municipalities specifically call for collaboration between SU and the municipalities towards “sustainable local economic development” (Stellenbosch University, 2011). As a result, the final phase of the study sought to measure the economic impact of the community interaction agreements. The first part of this phase examined the university's operational impact, including direct expenditures, total payroll and taxes paid. Also included were revenues from research generated university owned companies. Phase three included a highly structured analysis of various artifacts describing the university's economic impact. These artifacts included the university's 2012 annual report, Stellenbosch University Division for Institutional Research and Planning institutional data, the 2012 community interaction annual report and the Innovus 2012 annual report.

To measure economic impact, a highly structured questionnaire was used to provide the researcher with greater predictability over the data collected. Two cross-sectional web-based self-administered questionnaires were used with participants chosen at random, to quantify student spending (non-university related), faculty/staff tax payments and visitor spending. Finally, the total economic effect was calculated by accounting for the various operational impacts combined with students, faculty and staff local expenditures.

3.7.3.1. Scope

Comparable to the first two phases, this section of the study sought to determine if there was a measurable impact of Stellenbosch University's interaction agreements in relation to the economic impact with the municipalities of Stellenbosch and Drakenstein. When

discussing the university's economic impact, the specific evaluative criteria or the policy objectives of Stellenbosch University's interaction agreements were used to guide the study. Similar to the first two phases, the researcher focused on effectiveness, efficiency and equity as the most politically important standards related to the university's economic impact as stated in the interaction agreements (Kraft, 2010).

As previously mentioned, the first evaluative criterion was effectiveness and relates to whether the stated goals and objectives are being met. For this phase, a list of quantifiable indicators for the economic impact policy objectives was developed and will be discussed later in the questionnaire section. The second universally important objective is policy efficiency which is defined as a means to justifying government action on the foundation of economic theories (Kraft, 2010). For the purposes of determining efficiency in this phase, an impact assessment method was used in developing the questions in the questionnaire section. The final politically important evaluative tool of outcomes equity was also used to examine the results and determine if some citizens fare better than others regarding education, employment income, housing, and so on, because of the policy (Kraft, 2010). Specifically, the economic impact study focused on outcomes related to the university's goal of reciprocity and a set of questions related to outcomes equity was incorporated into the questionnaire.

3.7.3.2. Participants Selection

Questionnaires were used in this phase to seek to quantify student, faculty, staff and visitor spending in the local economies of Stellenbosch and Drakenstein. However, unlike the first two phases, probability sampling was used to generate a sample list so that each individual had an equal chance of being selected (Gillham, 2000). This section of the study uses the equal probability of selection method (EPSEM) and a systematic sampling approach for the student, faculty and staff populations respectively (Babbie, 2010). A systematic sampling approach was viewed as the most efficient process to use to obtain a sample population while reducing the chance for human bias. Stratification of the student, faculty and staff populations was not used. As noted by Babbie, a systematic sampling approach should be sufficient given a large sample size such as the university study population (Babbie, 2010). Figure 3.8 outlines the selection criteria for the participants in phase three of the study.

Selection Criteria for Participants in Phase 3	
<p style="text-align: center;">Questionnaire B for Students</p> <p>Inclusion Criteria:</p> <ol style="list-style-type: none"> 1.) Full-time or part-time students of Stellenbosch University 2.) Students 18 years of age or older as specified by DESC proposal. 3.) Students that were proficient in English or Afrikaans. 4.) Students who were voluntarily willing to participate in the study. 	<p style="text-align: center;">Questionnaire C for University Employees</p> <p>Inclusion Criteria:</p> <ol style="list-style-type: none"> 1.) Full-time or part-time university employees of Stellenbosch University. 2.) Faculty and staff that were proficient in English or Afrikaans. 3.) Faculty and staff that were voluntarily willing to participate in the study.

Figure 3.14 Selection criteria for participants in phase 3

Related to the first two phases, this segment of the research sought to measure the economic impact of Stellenbosch University's interaction agreements between the university and surrounding municipalities of Stellenbosch and Drakenstein. Research was conducted regarding the institution regarding human capital development, fostering a knowledge-based economy and contributions to a sustainable regional economy. Information from the Stellenbosch University Office of Institutional Research and questionnaires from student, faculty, staff and visitors to quantify spending in the local economies of Stellenbosch and Drakenstein made up the majority of the research findings in this section.

An invitation was sent to all students, faculty and staff at Stellenbosch University including the five campuses of Stellenbosch, Tygerberg, Bellville Park, Saldanha and Elsenburg. This included approximately 16,932 or 61 percent undergraduate students, 9,853 or 35 percent graduate students and 1,038 or 4 percent special students. Additionally, questionnaires were sent to a total staff of approximately 2,958 consisting of 939 academic staff and 2,019 non-academic staff.

3.7.3.3. Student Expenditures Questionnaire

Aligning the study with the first two phases, the researcher employed the standards of effectiveness, efficiency and equity for the following questionnaire based on the literature review with the multiple economic impact objectives of the community interaction agreements. In terms of metrics, the study used commonly identified criteria from the Association of Public Land Grant Universities (APLU) initiative working in partnership with the Association of American Universities (AAU) and the Bureau of Economic Analysis (BEA) to develop procedures for accurately conducting university economic impact studies (Association of Public and Land Grant Universities, 2013). The questionnaire incorporated mostly closed-ended questions to gather quantifiable spending pattern data and attention was given to presenting a logical developmental ordering of the questions to increase data quality (Gillham, 2000). Furthermore, the questionnaire was piloted first with promoters and a small sample to increase the response rate. Also, follow-up reminders were sent to non-respondents within the initial ten day period to increase the overall response rate (Gillham, 2000). The following contains a list of survey questions modified from the University of Arkansas Economic Impact Study which is currently one of the pilot higher education institutions in the APLU initiative (Association of Public and Land Grant Universities, 2013). In addition to the survey questions, the researcher also provided an in depth justification and aim that each question sought to address.

Question 1: Where is your local residence?

Stellenbosch Municipality (Stellenbosch, Franschoek and Pniel) [Code = 1], Drakenstein Municipality (Paarl, Wellington, Saron, Gouda and Simondium) [Code = 2], Cape Town [Code = 3], Western Cape [Code = 4], Other (please specify) [Code = 5] [Textbox]

The aim of this question is to determine the participant's residency for inclusion into the data sets for the interaction agreements between Stellenbosch and Drakenstein.

Question 2: What is your postal code?

Similar to question 1, the aim of this question is to further validate the participant's residency in order for inclusion into the data sets for the interaction agreements between Stellenbosch, and Drakenstein.

Question 3: Do you live in: university housing, rental property, self-owned property, parent owned property or other?

The purpose of this question was to determine type of housing in order to isolate the variables of on-campus versus off-campus spending.

Question 4: If you own property or reside in parent-owned property, what is your best estimate of the current market value of your home (the amount for which you might sell it)?

As a follow-up to question 3, the purpose of this question was to determine an estimated current market value of the off campus home for tax purposes.

Question 5: How many people live in your household (include yourself)?

The aim of this question was to determine any additional residents of the home for potential multiplier effects and to isolate additional spending patterns.

Question 6: Do you have children under the age of 18 in the household?

The target of this question was to determine any if any children resided in the home for potential multiplier effects and to isolate additional spending patterns.

Question 7: How many months in a year do you live in the Stellenbosch and Drakenstein region?

The aim of this question was to account for students living only part-time in the study regions.

Questions 8 through 25 were designed to estimate local expenditures in the study area. The subsequent brief explanation was given followed by individual questions.

Please estimate your average MONTHLY expenditures in the Stellenbosch and Drakenstein region area paid to local businesses in the following categories. Include entire housing and utility payments regardless of where the check is sent. If you are sharing expenses, please respond with only that part of the expenses you pay. Please fill out the fields applicable to your housing situation. Please enter numeric text in South African Rand only:

Question 8: Books and school supplies:

Question 9: Rent for a NON-university owned property (total amount paid to landlord):

Question 10: Mortgage (exclude tax and insurance payments):

Question 11: Cell phone (local only):

Question 12: Groceries:

Question 13: Restaurants and bars:

Question 14: Entertainment, recreation, and sports:

Question 15: Clothing:

Question 16: Laundry/dry cleaning:

Question 17: Medical and dental out of pocket:

Question 18: Pharmacy (prescription and non-prescription):

Question 19: General merchandise (household furnishings, electronics, furniture, appliances, etc.):

Question 20: Motor vehicle purchases, repair, and fuel:

Question 21: Local transit:

Question 22: Other personal services (barber shop, beauty shop, fitness):

Question 23: Estimate month utility payment if not included in rent:

Water:

Sewer:

Electric:

Internet:

Natural gas and/or heating oil:

Cable television:

Telephone:

Question 24: Other (please specify below):

Question 25: If applicable, please specify what expenditures the "Other" refers to:

Question 26: Do you have a job or internship locally? (Please do not include work study or other University employment.)

The aim of this question was to measure the impact of student employment. Student employment was listed as one of the key metrics for identifying university contributions to regional economic growth according to the APLU Commission for Innovation, Competitiveness and Economic Prosperity (Association of Public and Land Grant Universities, 2013).

Question 27: If you have a local job, how many hours do you work at this job each week on average?

Similar to question 26, the aim of this question was to measure the impact of student employment by obtaining further detail in order to estimate wages.

Question 28: What is your hourly wage rate?

Similar to question 26 & 27, the aim of this question was to measure the impact of student employment by obtaining further detail in order to estimate wages.

Question 29: How many visitors (parent, friends, etc.) have you had in the last twelve months in the area? Please count each visit separately, even if the same person visited more than once. Only include your visitors and do not include visitors of roommates.

This question was aimed at estimating visitor spending and to avoid double counts it was stressed to not include visitors of roommates which potentially may have been surveyed as well.

Question 30: How many days did your visitors typically stay (per visit)?

This question was related to question 29 in order to estimate the total visitor spending.

Question 31: Please estimate how many nights your visitors spent in hotels or B&B's (per visit):

This question was related to question 29 & 30 for estimation of visitor spending.

Question 32: Please use this area for any additional comments you might have:

This question was designed to capture any additional information not previously recorded.

3.7.3.4. Faculty & Staff Expenditures Questionnaire

Aligning the study with the first two phases and the student expenditure questionnaire, the researcher employed the standards of effectiveness, efficiency and equity for the following faculty and staff questionnaire. Closely linked to the previous student expenditure questionnaire, the survey used commonly identified criteria from the Association of Public Land Grant Universities (APLU) initiative. The questionnaire incorporated mostly closed-ended questions to gather quantifiable spending pattern data and attention was given to presenting a logical developmental ordering of the questions to increase data quality (Gillham, 2000). Like the student questionnaire, this survey was piloted first with promoters and a small sample to increase the response rate. Furthermore, follow-up reminders were sent to non-respondents within the initial ten day period to increase the overall response rate (Gillham, 2000). The following contains a list of survey questions modified from the University of Arkansas Economic Impact Study and is currently one of the pilot higher education institutions in the APLU initiative (Association of Public and Land Grant Universities, 2013). Along with the survey questions, the researcher also provided an in-depth justification and aim that each question sought to address.

Question 1: Where is your local residence?

Stellenbosch Municipality (Stellenbosch, Franschoek and Pniel) [Code = 1], Drakenstein Municipality (Paarl, Wellington, Saron, Gouda and Simondium) [Code = 2], Cape Town [Code = 3], Western Cape (Rural) [Code = 4], Other (please specify) [Code = 5]

The aim of this question is to determine the participant's residency for inclusion into the data sets for the interaction agreements between Stellenbosch and Drakenstein.

Question 2: What is the postal code for your local residence?

Similar to question 1, the aim of this question is to further validate the participant's residency in order for inclusion into the data sets for the interaction agreements between Stellenbosch and Drakenstein.

Question 3: Do you live in: an apartment or house rented from an individual or company, a self-owned property (house, apartment, condominium), a university-owned property or other?

The purpose of this question was to determine type of housing in order to isolate the variables of on-campus versus off-campus spending.

Question 4: For Property Renters Only, What do you pay for rent each month? If you are sharing living quarters with non-family members, please include only the part that you pay.

As a follow-up to question 3, the purpose of this question was to determine an estimated current market value of the off campus home for tax purposes.

Question 5: Which of the following utility services are included in your rental payment?

Electric [Code = 1], Natural Gas [Code=2], Water/ Sewer [Code=3], Trash [Code=4], TV [Code=5], Internet [Code=6], Telephone (land line) [Code = 7]

This question was designed to isolate any utility payments that were included in the rental payment so as not to overstate the rental impact.

Questions 6 through 13 were designed to estimate local expenditures in the study area. The following brief explanation was given followed by individual questions.

Please estimate your monthly payments for the following utilities that are not included in the rental payment. If you are sharing living quarters with non-family members, please include only the part that you pay.

Question 6: Electric [blank]

Question 7: Natural Gas [blank]

Question 8: Water/ Sewer [blank]

Question 9: Trash [blank]

Question 10: TV [blank]

Question 11: Internet [blank]

Question 12: Telephone (land line) [blank]

Question 13: Cell Phone (local only) [blank]

Question 14: For Property Owners Only, What is your best estimate of the current market value of your home (the amount for which you might sell it)?

The purpose of this question was to determine an estimated current market value of the off campus home for tax purposes.

Questions 15 through 22 were designed to estimate utilities and included the following qualifying statement. Please estimate your monthly payments for the following utilities. If you are sharing living quarters with non-family members, please include only the part that you pay.

Question 15: Electric [blank]

Question 16: Natural Gas [blank]

Question 17: Water/ Sewer [blank]

Question 18: Trash [blank]

Question 19: TV [blank]

Question 20: Internet [blank]

Question 21: Telephone (land line) [blank]

Question 22: Cell Phone (local only) [blank]

Questions 23 through 28 were designed to obtain household information for economic impact estimation purposes.

Question 23: How many people live in your household (include yourself)? [blank]

Question 24: Family members [blank]

Question 25: Non-family members [blank]

Question 26: If you have children, please list the number in your household that are:

Question 27: Enrolled in private school, grades K-12 [blank]

Questions 28 through 35 were related to the respondent's spouse or partner (if the respondent was married).

Question 28: A Stellenbosch University student [blank]

Question 29: Employed by Stellenbosch University [blank]

Question 30: Employed in the Stellenbosch area but not by the University [blank]

Question 31: Employed outside the Stellenbosch area [blank]

Question 32: Unemployed, but not seeking paid employment [blank]

Question 33: Unemployed, but seeking paid employment [blank]

Question 34: Retired [blank]

Question 35: Other [blank]

Question 36: What percentage of your household's total wage and salary income come from Stellenbosch University? ([blank])

The aim of this question was to determine the total wage and salary income from Stellenbosch University in order to protect against overstating the total economic impact.

Question 38 and 39 related to vehicle information for estimating local tax impacts.

Question 38: Does your household own any vehicles registered locally (in Stellenbosch or surrounding communities previously mentioned)?

Question 39: What is the market value of your vehicle that is registered locally?

Questions 40 through 43 related to visitors and their potential economic impact on the study area. Visitor related questions began with the following introduction and clarification statements. How many visitors (parent, friends, etc.) have you had in the last twelve months in Stellenbosch area? Please count each visit separately, even if the same person visited more than once. Only include your visitors and do not include visitors of roommates.

Question 40: Please enter numeric text only: ___ visitors [Code = 1] [Textbox - Numeric]

Question 41: How many days did your visitors typically stay (per visit)?

Question 42: Please estimate how many nights your visitors spent in hotels or motels (per visit):

Question 43: Please use this area for any additional comments you might have:

This question was designed to capture any additional information not previously recorded.

3.8. Data Analysis

The process of analysis and processing of data is a vital part of research in order to present findings to the study's readership in a clear and consistent manner (Kumar, 2011). Making sense out of collected text and raw numerical data is essentially the process of data analysis (Creswell, 2008). Furthermore, data analysis for quantitative data includes a descriptive and numerical investigation while qualitative data includes descriptive and text investigation (Creswell & Clark, 2007).

In mixed methods research, data analysis refers to the type of investigative approach selected for the research procedures (Creswell, 2008). As indicated in section 3.5, the investigative approach used in this research study was a concurrent embedded design. As a result, the quantitative data collected served as the primary source with qualitative data participating in a supportive role. A concurrent embedded design allows for data collection to occur at the same time at multiple levels. For instance, a survey can be piloted to a sample group at one level to collect quantitative outcomes while at the same time the researcher can collect qualitative interviews to explore the issue at the individual level (Creswell, 2008).

For qualitative data analysis, the process is about an ongoing dialogue of continual reflection and analytically questioning of the research data. Qualitative data analysis starts by asking broad research questions, collecting the open ended data and then breaking down the information provided by the participants (Creswell, 2008). In addition, the qualitative data analysis process includes coding and classifying data. The process of coding and analyzing data involves taking data in raw form and elevating it through interrelating themes to a conceptual level (Corbin & Strauss, 2007). For this study, Tesch's (1990) guide to coding and assimilating the text data was used. To develop the initial coding, the researcher read through the source documents to interpret meaning and

gain a general understanding. Then, the coding process began by organizing the evaluative categories and major themes from the community interaction agreements. The process included an interpretive viewpoint as the researcher allowed major themes and sub-themes to emerge from the documents. Major themes were considered patterns of information that repeated multiple times within the data and sub-themes were individual groupings within the major themes. The evaluative criteria related directly to the concepts of effectiveness, efficiency, and equity discussed within section 2.3.1. The next step in qualitative data analysis is to examine the text for themes or perspectives and positioning it within a particular theoretical model. Researchers can use several qualitative strategies of inquiry to accomplish this including grounded theory, case studies, ethnographies, phenomenological and narrative research (Creswell, 2008). The final step involves interpreting the meaning of the previously identified themes and descriptions. For the purposes of this study, a visual display of the qualitative data analysis process is depicted in Figure 3.9.

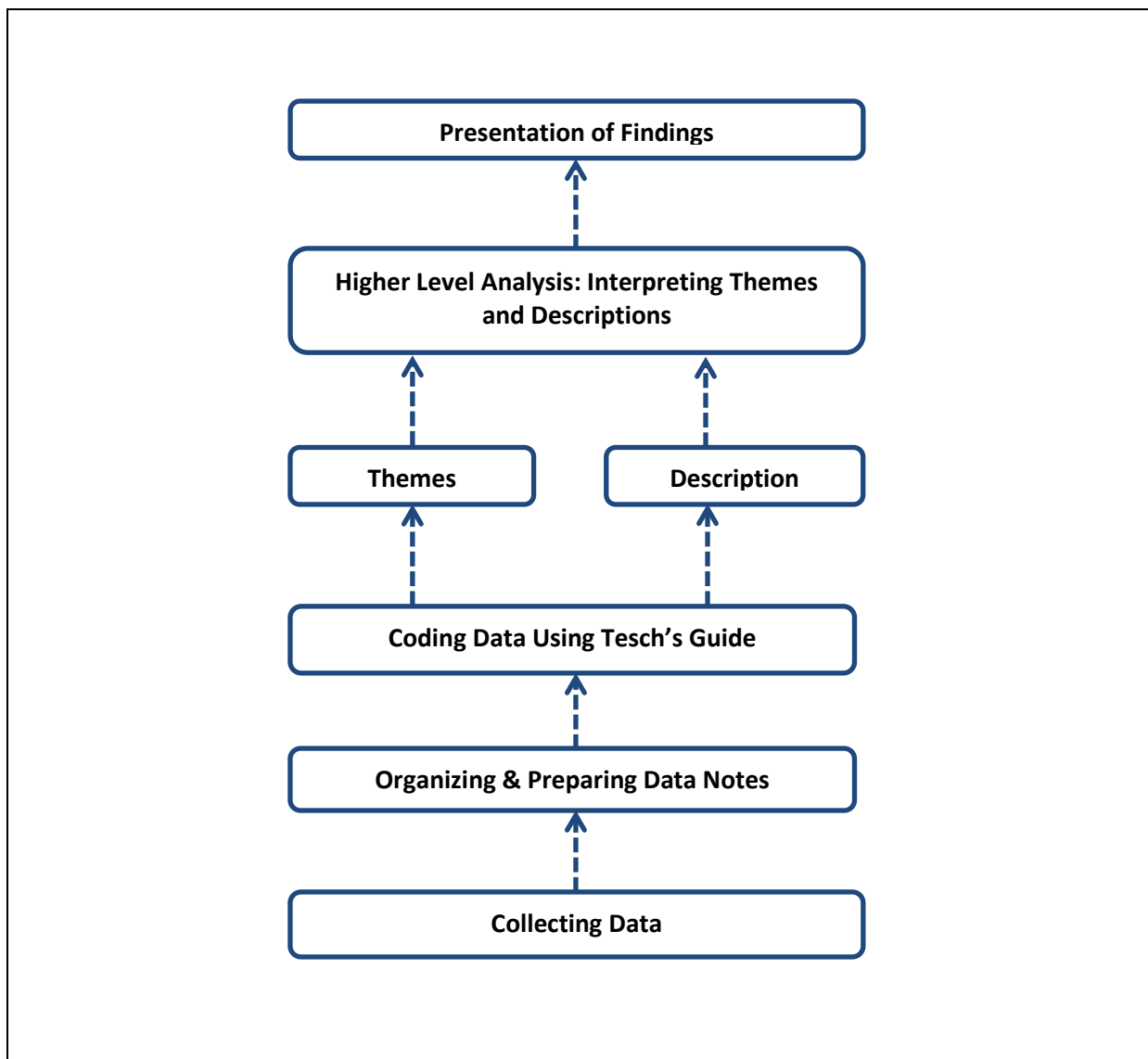


Figure 3.15 A visual display of the qualitative data analysis process (Creswell, 2008)

For quantitative research, the process of data analysis involves a series of steps that eventually leads to interpretation of the results. According to Creswell (2008), the first step involves reporting information regarding the number of people who returned and did not return the survey. The next step involves analyzing the effect of response bias. Response bias essentially involves estimating if the participants that do respond substantially differ from those who do not respond (Armstrong & Overton, 1977). For this study, a wave analysis was used by examining survey returns on a week by week basis to determine if the average responses changed (Leslie, 1972). The assumption in a wave analysis is that participants that respond at the end are considered non-respondents and based on the content of their responses potential bias may exist (Leslie, 1972). The

third step should consist of a descriptive breakdown that includes the sample sizes, standard deviations and range for the variables for each research phase (Creswell, 2008).

To enhance this study's data analysis, the researcher met with staff from the Stellenbosch University Statistical Consultation Centre to discuss the data collection. For phase one, which included questionnaires to gather information from municipal administrators and university staff, purposive sampling was used to determine the impact of the development agreements between Stellenbosch University and the surrounding local governments. In this study, purposive sampling was deemed necessary as there was no feasible probability based alternative available (Ornstein, 2013). Results from the municipal administrators and university staff were not projected on a larger population and therefore, a target sample size, confidence interval and confidence level were not estimated. Additional data sources included the community interaction documents between Stellenbosch University and the municipalities of Stellenbosch and Drakenstein.

For phase two, questionnaires were used to gather information from project leaders involved in university interaction projects, programs, and initiatives to triangulate responses from the first phase. For phase two, there were a total of 152 community interaction projects registered at Stellenbosch University in 2012. As a result, the project leader questionnaire was sent to all 77 registered project leaders within the community interaction database. It is important to note that many project leaders administered or was the designated contact person for multiple community interaction projects. Results from the project leaders were not projected on the population as a whole and therefore, a target sample size, confidence interval and confidence level were not estimated. Data sources also included Stellenbosch University's community interaction database, the community interaction annual report, the HOPE project and the book *Sustainable Stellenbosch – Opening Dialogues*. These documents were accessed over a period of two months from June 2013 through August 2013. In addition, the documents were selected and analyzed to provide specific information pertaining to identified social impact metrics such as total community interaction projects, total student volunteers and other social performance indicators.

For phase three, questionnaires were used to quantify student, faculty, staff and visitor spending in the local economies of Stellenbosch and Drakenstein. The source documents

for this phase included the Stellenbosch University 2012 annual report, Stellenbosch University Division for Institutional Research and Planning institutional data, Stellenbosch University's 2012 community interaction annual report and the Innovus 2012 annual report. These documents were accessed over a period of two months from July 2013 through September 2013. Furthermore, the documents were selected and analyzed to provide specific information pertaining to identified economic impact metrics such as direct expenditures, total payroll and taxes paid. For phase three, a total of 27,823 students were enrolled at Stellenbosch University in 2012. Therefore, the economic impact phase required the student expenditures questionnaire sample size of 475 undergraduates, graduate students and special students in order to meet a target confidence interval of 4.5 and a confidence level of 95 percent. Additionally in 2012, the university employed a total staff of 2,958 consisting of 939 academic staff and 2,019 non-academic staff. As a result, the faculty and staff questionnaire targeted a sample size of 475 as well in order to meet a target confidence interval of 4.5 and a confidence level of 95 percent. After discussing with staff from the Stellenbosch University Statistical Consultation Centre, it was decided to send an invitation to all faculty, staff and students to participate in the study in order to obtain the sample sizes needed. In addition, stratification questions were added to the questionnaires that included questions regarding gender, student classification, employee classification and ethnicity in order to compile a more representative sample of the university. Figure 3.10 illustrates the sample size needed for different precisions in estimating proportions.

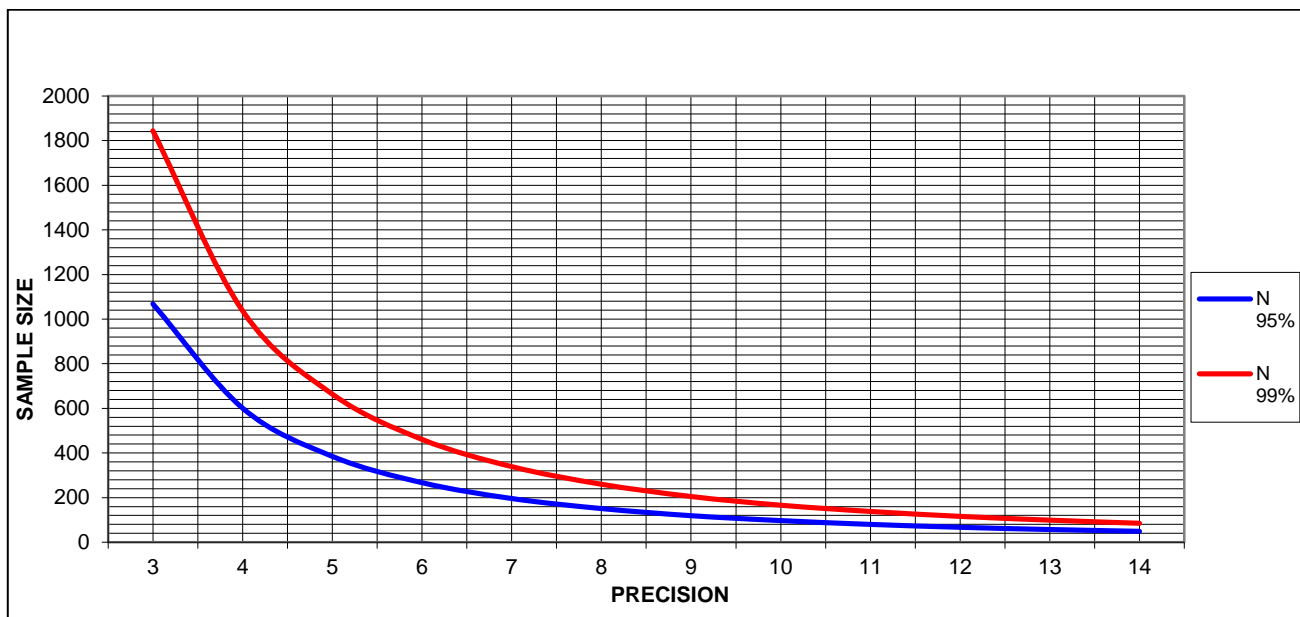


Figure 3.16 Sample size needed for different precisions in estimating proportions (Modified from the Stellenbosch University Statistical Centre, 2013)

The fourth step involved developing a scale instrument for the study which was not applicable to this study. The fifth step included identifying the statistics and a statistical program to be used for testing the research questions in the study (Creswell, 2008). After discussions with staff from the Stellenbosch University Statistical Consultation Centre, the researcher used sample size software provided by the consultation centre along with data calculations on excel spreadsheets for the median student, faculty and staff expenditures. The final step involved presenting the results in a format to allow interpretation of the results from the statistical test chosen. The final step included reporting the level of statistical significance, if the research question was answered, explanation of the results and implications for future research (Creswell, 2008).

3.9. Validity & Reliability

Throughout the mixed methods literature, the concepts of validity and reliability are highly contested between qualitative and quantitative research (Kumar, 2011). Quantitative research criteria include internal and external validity, reliability and objectivity (Kumar, 2011). Lincoln and Guba (1994) have proposed a structure of four criteria as part of a constructionist model for qualitative research that help to guide validity and reliability in parallel with quantitative research including credibility,

transferability, dependability and conformability. The four criteria were applied in the study as follows:

The first criterion outlined by Lincoln and Guba (1994) was credibility in qualitative research that parallels internal validity in quantitative research. Essentially, credibility involves ensuring that the results of the research are credible or believable from the participant's perspective (Donnelly & Trochim, 2007). Positioned another way, Silverman describes validity as synonymous with truth (Silverman, 2009). Furthermore, sometimes one may doubt the validity of research results because the researcher made no attempt to deal with opposing views or explain the larger context (Silverman, 2009). It is important to note that phase one and two of this research study involved recording and reporting participants' views and opinions while phase three relied on participants' honesty, memory and willingness to make an effort to find the information requested. To address this issue, credibility was improved in this study by collecting data from multiple sources which included municipal administrators, university staff and students. Furthermore, this study used different data collection methods including surveys. The surveys that were administered were pilot tested first, and questionnaire were reviewed for legitimacy by advisors and the promoter.

The next criterion outlined was transferability in qualitative research that equals external validity in quantitative research (Guba & Lincoln, 1994). Transferability is the degree to which the results of a study can be generalized or transferred to other contexts (Donnelly & Trochim, 2007). Transferability was enhanced in this study by extensively describing the methodological approach taken for others to potentially follow. Furthermore, the various strengths and weaknesses of each mode of data collection were examined, ultimately choosing a multi-mode approach that primarily used self-administered surveys. To enhance external validity for phase three, self-administered surveys were chosen as the primary mode to reduce interviewer bias and reduce social pressure on respondents (Ornstein, 2013).

The next criterion outlined was dependability in qualitative research that matches reliability in quantitative research (Guba & Lincoln, 1994). According to Donnelly, dependability in research is defined as being able to obtain the same results if the researcher was able to observe the same scenario twice (Donnelly & Trochim, 2007).

Similarly, reliability relates to the consistency regarding the methods of data collection and not misrepresenting the findings (Denscombe, 2010). Dependability was achieved in this study by keeping detailed records of the research process and consistently adhering to the previously outlined methodology. Self-administered surveys were chosen due to the extensive research survey evidence that when compared to face-to-face or telephone surveys often result in more truthful answers to sensitive questions (Ornstein, 2013). However, a common weakness in self-administered surveys was response rates. To overcome response rate issue and to increase reliability, the research employed common field strategies for increasing survey response including creating a general information leaflet to enhance the pitch and persistent follow-up to encourage respondents to participate (Ornstein, 2013).

The final criterion outlined was conformability in qualitative research that parallels objectivity in quantitative research (Guba & Lincoln, 1994). According to Donnelly, conformability is defined as the degree in which the results of a study could be corroborated by others (Donnelly & Trochim, 2007). Conformability was accomplished in this study by following a predetermined detailed methodological process and including respondent validation throughout the research. Similar to ensuring dependability, the researcher sought to develop a system of research that could be replicated by others for future research to enhance conformability. It is important to note this research is not generalizable; however, others in similar situations will be able to use the findings to develop an understanding of their own context.

To the extent possible, the researcher attempted to ensure the concepts of validity and reliability in both qualitative and quantitative researcher were strictly followed. A visual comparison of the concepts of validity and reliability between qualitative and quantitative research are depicted in Figure 3.11.

Traditional criteria for judging quantitative research	Alternative criteria for judging qualitative research
Internal Validity	Credibility
External Validity	Transferability
Reliability	Dependability
Objectivity	Conformability

Figure 3.17 Visual comparison of the concepts of validity and reliability between qualitative and quantitative research (Donnelly & Trochim, 2007)

3.10. Ethical Considerations

Ethical behavior helps to guard individuals, communities and environments while offering the opportunity to increase the total good in the world (Israel & Hay, 2006). As a result, anticipating and mitigating potential ethical issues is an important exercise throughout the research proposal process (Hesse-Biber & Leavy, 2006). Researchers have an obligation to protect their participants, uphold integrity during the research process, and safeguard against misbehavior that may reflect poorly on their institutions or organizations (Israel & Hay, 2006). During this study, the research conducted complied with Stellenbosch University's ethical guidelines as well as relevant professional bodies and scientific organizations.

The departmental ethics screening committee (DESC) checklist was completed and submitted to the Curriculum Studies Department on 28 July 2013. The Research Ethics Committee: Human Research (Humanities) approved the study and issued a proposal number DESC_Orr2013 for use on any documents or correspondence with the university. A copy of the approval form is included in the study's appendices section as appendix A. Furthermore, institutional permission was requested 2 April 2013 and granted on 25 July 2013 with a few restrictions. Institutional permission for the use of Stellenbosch University financial information as stipulated in the application for phase three was declined as the information does not reside in the public domain. As an alternative however, the financial information requested was located in the university's 2012 annual report which is a publically accessible document. Therefore, the researcher used the

financial information detailed in the annual report, and the limitations of such data are discussed later in chapter 7.

Practicing ethical research behavior includes planning for minimizing harm, informed consent, confidentiality and research integrity (Israel & Hay, 2006). The following describes in detail how the study complies with the four major ethical research behaviors listed above.

3.11.1 Minimizing Harm

According to Kumar (2011), it is important to carefully inspect when collecting data from participants whether their involvement is likely to cause harm. If there is a potential for harm the researcher must take steps to reduce the potential harm to a minimal level. A minimal level of risk was accomplished in this research study and the level of risk is no greater than the participant would normally face in everyday life (Kumar, 2011). In addition, the researcher has an ethical obligation to protect the participant from harm and must inform participants beforehand of any potential harm as a result of participation in the study (Strydom, 2005). To protect and inform them of potential harm, participants were notified as part of the informed consent process of information pertaining to the participant's potential exposure to harm. Furthermore, because no identifying personal information was obtained from the participants, the potential for exposure to harm was deemed to be minimal.

3.11.2 Informed Consent & Voluntary Participation

It is considered unethical research practice in all disciplines to collect information without the knowledge of participants and their informed consent (Kumar, 2011). According to Flynn and Goldsmith (2012), the term *informed consent* suggests that research participants understand the risks and the rewards of participating in a given research project. In this study, written informed consent was obtained.

In addition, informed consent implies comprehension of the risks and benefits of participation in a given research project (Flynn & Goldsmith, 2012). To assist participants in the comprehension of this study, participants were provided information regarding the purpose of the study, procedures, potential risks and benefits, confidentiality, voluntary participation, of the investigators' identification and the rights of research participants.

Finally, participants must know that participation is voluntary and that at no time should anyone be forced to participate in the project (Flynn & Goldsmith, 2012). Participants in this study were requested to take part in the study and informed that their participation was voluntary. The participant's right to withdraw at any time without any consequences and the right to decline was also articulated in the consent form.

3.11.3 Confidentiality

In addition, confidentiality must be guaranteed to protect against unwanted exposure for research participants (Denscombe, 2010). As stated by Kumar (2011), it is unethical to be careless regarding the participant's privacy and confidentiality of information gathered during a research study. In regards to this study, all information obtained via questionnaires was treated as strictly confidential. Information pertaining to confidentiality was incorporated into the informed consent form and assurances were given to participants regarding privacy. All personal data was maintained by a password-protected computer and backed up on a password protected storage device. Furthermore, the researcher was the only person with access to the password. As indicated to all participants, the research data collected will be kept for three years following the initial data collection phase and will be destroyed within 6 months of the completion of the PhD program. Additionally, to protect participant privacy no identifying personal information was included in any unpublished or published documents.

3.11.4 Research Integrity

Research integrity issues are those that primarily relate to the researcher. Integrity issues include avoiding bias, using an unsuitable methodology, reporting errors and inappropriate information. Simply stated, a deliberate bias to misrepresent information found in research is unethical (Kumar, 2011). It is considered unethical to purposely use a research methodology in order for the researcher to prove or disprove a given argument. Furthermore, steps were taken to avoid the introduction of bias accidentally. For instance, the researcher decided not to offer rewards for survey completion due to the potential for bias among respondents of different socio-economic levels (Ornstein, 2013). In addition, unethical conduct includes using an invalid instrument, selecting a highly biased sample or the researcher intentionally drawing the wrong conclusions (Kumar, 2011). To overcome these ethical risks, the researcher examined multiple modes of sampling and participant selection in order to determine the appropriate process for the participants

under investigation. Additionally, it is important to note that reporting results in a format that inherently alters or slants the information to serve a personal or professional interest is unethical. Finally, using information that directly or indirectly negatively impacts participants is considered unethical (Kumar, 2011). The inappropriate use of information relates to the ‘do no harm’ principle and steps should be always taken to minimize harm. Regarding all of these research integrity issues, steps were taken to ensure truthfulness and transparency throughout the study.

3.11. Clarification of Key Concepts

The key terminology that was used in this research study is discussed below, and additional higher education terminology can be located in the glossary at the end of the document.

Community Engagement (CE)

It is important to note that the term *community engagement* (CE) is used synonymously in this study with Stellenbosch University’s chosen definition of community interaction. Both terms are used to encompass the wide-ranging forms of contact between the university and the surrounding communities. According to Driscoll, community engagement is defined as “the collaboration between higher education institutions and their larger communities (local, regional, state, national, international) for the mutually beneficial exchange of knowledge and resources in a context of partnership and reciprocity” (Driscoll, 2009, p.9). In South Africa, most HEIs use the Higher Education Quality Commission definition of community engagement as “initiatives and processes through which the expertise of the institution in the areas of teaching and research are applied to address issues relevant to its community” (Higher Education Quality Committee/ JET Education Services South Africa, 2007, p.3). However, community engagement can also be found in a variety of forms, including relatively non-structured projects to structured academic programs that address at specific community need (Higher Education Quality Committee/ JET Education Services South Africa, 2007). Additionally, the projects might promote the foundation of a better environment for community engagement while other projects may directly involve teaching, learning and research (Higher Education Quality Committee/ JET Education Services South Africa, 2007).

Local Economic Development (LED)

When local government, resident communities and the private and non-profit sectors work together to improve the local economy, such collaboration is known as local economic development or LED (World Bank, 2004). LED involves a wide range of disciplines that focus on enhancing competitiveness, ensuring inclusive growth and that the growth is sustainable long term (World Bank, 2004). Local economic development can be commenced over various geographic areas and can include multiple communities. The World Bank also notes that most successful approaches are pursued in partnership with local government strategies by continually improving the area's investment climate, competitiveness within its business environment, retaining jobs and improving incomes (World Bank, 2004).

Higher Education (HE)

Higher Education within the South African context as defined by the Higher Education Act of 1997 and later amended by the National Qualifications Framework Act of 2008 defines higher education as “all learning programs leading to qualifications higher than grade 12 or its equivalent in terms of the National Qualifications Framework as contemplated in the South African Qualifications Authority Act of 1995 and includes tertiary education as contemplated in Schedule 4 of the Constitution; a qualification that meets the requirements of the HEQF” (Higher Education Act of 1997, p. 1).

Higher Education Institution (HEI)

The Higher Education Act of 1997 also defines higher education institutions (HEIs) as “any institution that provides higher education on a full-time, part-time or distance basis which is:

- a) established or deemed to be established as a public higher education institution under this act;
- b) declared as a public higher education institution under this Act; or
- c) registered or conditionally registered as a private higher education institution under this Act” (Higher Education Act of 1997, p.1).

For the purposes of this study, it is also important to further define exactly what a university is. Although there are numerous policy documents on the restructuring and

transformation of South African higher education, there is no distinct definition of what a university is, according to the author Lategan (2009). Lategan goes on to render the following definition of a university which will be used for the purposes of this study as “an academic institution at which research is conducted and teaching/learning is offered within the organized cadre of the contact between lecturer and student”(Lategan, 2009, p.1).

Human Capital (HC)

The World Bank defines human capital as “people’s innate abilities and talents plus their knowledge, skills and experience that make them economically productive.” Furthermore, human capital can be improved and developed by investments in education, health care and employment training (World Bank, 2004). In the higher education context, higher education institutions’ (HEIs) impact on human capital development can be documented by providing individuals with both private and public benefits. Private benefits are exclusive to the educated individual such as increased earnings, health benefits and children’s education. Public benefits include the spillover effects to the society in general such as higher employment, lower crime rates and greater civic participation and community involvement (McMahon, 1998).

Knowledge-based Economy (KBE)

A knowledge-based economy can be defined as the ability to introduce and transform new ideas, considerations, processes and ultimately products that will translate into economic development by generating wealth and thus contributing to the value of a local economy (Huggins & Izushi, 2007). Another definition of a knowledge-based economy includes one where people and organizations acquire, create and disseminate information to use knowledge more effectively (World Bank, 2004). In addition, the World Bank points to the increased significance that knowledge plays in providing potential for countries to improve their social and economic development by increasing production efficiency for goods and services (World Bank, 2004).

SU Community Interaction Agreements

The Stellenbosch University’s (SU) community interaction agreements refer to a set of documents between the university and the municipalities of Stellenbosch and Drakenstein. Specifically, the university signed memoranda of understanding (MOUs)

outlining strategic partnerships that established a framework for the university to address economic growth, municipal development needs, joint social projects and integrating the joint initiatives into the Integrated Development Plan (IDP) of the municipalities. The Stellenbosch MOU was signed in July 2007 and titled *Stellenbosch: A Sustainable University Town* (Stellenbosch University, 2007). The Stellenbosch Municipality includes the towns of Stellenbosch, Franschoek and Pniel, and the MOU included an agreement to work collaboratively on economic development, addressing the municipality's development needs and setting up joint projects where feasible (Stellenbosch University, 2007). The agreement also called for integrating the joint initiatives between the municipality and the university into the Integrated Development Plan (IDP) of Stellenbosch Municipality (Stellenbosch University, 2007). The next MOU mirrored the objectives of the Stellenbosch Municipality MOU and was signed in 2011 with the Drakenstein Municipality which includes the towns of Paarl, Wellington, Saron, Gouda and Simondium (Stellenbosch University, 2011).

3.12. Conclusion

In conclusion, this chapter included a discussion on the implementation of the mixed methodology through a description of the research questions and aim, research design, research paradigm, mixed methods approach, procedural plan, research phases, data analysis, validity and ethical considerations. The central research question, sub-questions and aim of the research was described and visually displayed in the research design.

In addition, the research paradigm was introduced as well as justification for choosing an integrated methodologies approach or FraIM approach. A detailed procedural plan was provided along with a description of each research phase. The process of data analysis was also discussed. The major concerns to data validity and reliability in research were also explored. The chapter was concluded by a discussion on ethical considerations for the study.

The research design and methodology chapter provided the framework for how the study was conducted. The next chapter presents the implementation and results of the research design within the methodological framework.

Chapter 4 Study Implementation and Results

4.1 Introduction

The previous chapters contained a review of the overall literature including: higher education policy analysis, higher education and community engagement, higher education and economic development and higher education economic impact studies. In addition, the research design and methodology was discussed. In this chapter, implementation of the study is explained along with the initial data analysis and results. Within the analysis sections, a notable shift towards providing information and data to policy makers for future policy formulation or revision occurs. Later within Chapter 5, a critical analysis is conducted along with references back to the literature.

4.2 Study Implementation, Data Analysis and Results

According to the procedural plan outlined in section 3.6, the researcher began by sequentially conducting phases one and two to investigate the perceptions of the university interaction agreements from the standpoint of higher education administrators, municipal administrators and community interaction project leaders. The final phase included a quantitative economic impact study of the university's impact by compiling university financial data along with expenditure questionnaires from faculty, staff and students. It is important to note, in this study, that the impact of the Stellenbosch University interaction agreements is the central theme with the first two phases examining perceptions and projects to assess social impact while the third phase sought to determine the economic impact.

In terms of mixing data for this research study, mixing occurred at all three stages including collection, analysis and interpretation in order to holistically answer the central question of impact of the Stellenbosch University interaction agreements. The data sets were also connected by linking the analysis in all three phases to answer the overall impact of the Stellenbosch University interaction agreements.

4.3 Phase 1: Community Interaction Agreements Analysis

The first phase included a policy analysis to assess the impact of the local and regional development agreements with municipalities. The scope of the study included the Stellenbosch Municipality which encompasses the towns of Stellenbosch, Franschoek and Pniel as well as the Drakenstein Municipality which includes the towns of Paarl, Wellington, Saron, Gouda and Simondium. The aim of the first phase was to determine the impact from a policy perspective. The methods used to achieve this included questionnaires that were developed based on the original agreements signed in 2007 (Stellenbosch) and 2011 (Drakenstein).

4.3.1. Artifact Theme Analysis

Within the context of Plowright's (2011) integrated methodologies approach or FraIM, an artifact analysis otherwise known as a document or textual analysis was used to deconstruct the community interaction agreements. More specifically, a theme analysis was used, including a closed coding schedule to measure the elements of interest in the artifact.

A closed coding system was employed based on the previously discussed evaluative criteria of effectiveness, efficiency and equity. For this study, Tesch's (1990) guide to coding and assimilating the text data was used. To develop the initial coding, the researcher read through the source documents to interpret meaning and gain a general understanding. Then, the coding process began by organizing the evaluative categories and major themes from the community interaction agreements. The process included an interpretive viewpoint as the researcher allowed major themes and sub-themes to emerge from the documents. Major themes were considered patterns of information that repeated multiple times within the data and sub-themes were individual groupings of information within the major themes. The process included an interpretive viewpoint as the researcher allowed categories to emerge from the documents. Table 4.1 provides a summary of the major themes and subthemes identified from the artifact analysis data.

Table 4.4 Summary of the major themes and subthemes from artifacts

Major Theme	Code	Evaluative Category	Sub-Theme
Structured Interaction	SI	Effectiveness	Sustainability
			Regular Communication
			Joint Projects
			Institutional Leadership
Contextual Requirement	CR	Efficiency	Community Need
Targeted Beneficiaries	TB	Equity	Community as beneficiary
			University as beneficiary
			Mutual Benefit

Theme Analysis

It was important to deconstruct the community interaction agreements based on the patterns of elements within the documents (Plowright, 2011). By examining the community interaction agreements, the following themes emerged from the Memorandum of Understanding Stellenbosch: A Sustainable University Town and Memorandum of Understanding: Drakenstein Municipality and Stellenbosch University:

Structured Interaction

The first major theme that emerged from the theme analysis was the idea of structured interaction between the university and the municipal government. The structured interaction relates directly with the evaluative category of effectiveness in terms of long term sustainability, regular communication, joint municipal-university projects and institutional leadership. The following sub-themes were noted in the documents:

- **Sustainability**

“That addressing the problems and optimizing the opportunities of Stellenbosch/Drakenstein can best be done by adopting the core principle of sustainability in all spheres of activity, whether educational, social, economic, technological, infrastructural or ecological,” Memorandum of Understanding Stellenbosch: A Sustainable University Town & Memorandum of Understanding: Drakenstein Municipality and Stellenbosch University.

“To work in a non-partisan manner with local business and industry, and with non-governmental, educational and community organizations towards sustainable local economic development,” Memorandum of Understanding Stellenbosch: A Sustainable University Town & Memorandum of Understanding: Drakenstein Municipality and Stellenbosch University.

“To a vision of Stellenbosch as a Sustainable University Town,” Memorandum of Understanding Stellenbosch: A Sustainable University Town.

- **Regular Communication**

“To pursue this vision and mission collaboratively through continuing and formalizing within their respective structures the regular Rector/Mayor Forum which has already been meeting successfully for some years,” Memorandum of Understanding Stellenbosch: A Sustainable University Town.

“To pursue this vision and mission collaboratively through continuing and formalizing cooperation within their respective structures,” Memorandum of Understanding Stellenbosch: A Sustainable University Town.

- **Joint Projects**

“To set up such joint projects as required and feasible,” Memorandum of Understanding Stellenbosch: A Sustainable University Town & Memorandum of Understanding: Drakenstein Municipality and Stellenbosch University.

“That these initiatives will form an integral part of the Integrated Development Plan of the Municipality,” Memorandum of Understanding Stellenbosch: A Sustainable University Town & Memorandum of Understanding: Drakenstein Municipality and Stellenbosch University.

- **Institutional Leadership**

“That the collaboration under the auspices of the Rector and Vice-Chancellor of the University and the Executive Mayor of Drakenstein will be undertaken so that Drakenstein will be able to address its responsibilities and challenges,” Memorandum of Understanding: Drakenstein Municipality and Stellenbosch University.

“That the exercise of their joint responsibilities can best flow through collaborative efforts under the auspices of the Rector of the University and the Executive Mayor of the Town,” Memorandum of Understanding Stellenbosch: A Sustainable University Town.

Contextual Requirement

The second major theme that emerged was the concept of the contextual requirement behind the agreements. The contextual requirement identified was related to policy efficiency as defined by a means to justifying action on the foundation of economic theories (Kraft, 2010). The following sub-theme was noted in the documents:

- **Community Need**

“That Stellenbosch remains a divided town, with a legacy from the past manifesting itself in: grave and pressing socio-economic problems, infrastructural backlogs, ecological problems, and great disparities between the wealthy and the poor,” Memorandum of Understanding Stellenbosch: A Sustainable University Town.

“That Drakenstein Municipality remains a divided municipality, with a legacy from the past that manifests itself in grave and pressing socio-economic problems, infrastructure backlogs, ecological problems, and great disparities between the wealthy and the poor,” Memorandum of Understanding: Drakenstein Municipality and Stellenbosch University.

Targeted Beneficiaries

The third major theme that emerged was the idea of targeted beneficiaries within each community interaction agreement. The perception of targeted beneficiaries within the agreements related to equity regarding who ultimately benefits from the agreements. The following sub-themes were documented in relation to targeted beneficiaries:

- **Community as beneficiary**

“That they have a responsibility, individually and jointly, to address the challenges facing Stellenbosch and to work towards a better future for all its inhabitants, temporary or permanent,” Memorandum of Understanding Stellenbosch: A Sustainable University Town.

“That they will work jointly towards a better life for the inhabitants of Drakenstein Municipality, and work jointly so that Drakenstein can meet its responsibility to address the challenges it faces,” Memorandum of Understanding: Drakenstein Municipality and Stellenbosch University.

- **University as beneficiary**

“That Stellenbosch University, with its extensive knowledge base, its vision to be an active role player in the development of South African society, its quest for greater relevance, its commitment to rural development through its HOPE Project and its focus on student success and the promotion of diversity and sustainability plays a key role in the development of

human potential in Drakenstein,” Memorandum of Understanding: Drakenstein Municipality and Stellenbosch University.

“That the University with its extensive knowledge base plays a key role in the development of human potential,” Memorandum of Understanding Stellenbosch: A Sustainable University Town.

- **Mutual Benefit**

“That they will pursue international interaction and initiatives to their mutual benefit,” Memorandum of Understanding Stellenbosch: A Sustainable University Town & Memorandum of Understanding: Drakenstein Municipality and Stellenbosch University.

4.3.2. Questionnaire Data Analysis

An overall response rate of 36 percent was received from the questionnaires regarding the impact of the community interaction agreements. Although lower than optimal, the response rate was deemed acceptable as the purpose was to gain insight regarding the respondent’s perceptions of the community interaction agreements. The narrative responses from the questionnaires were first summarized through a theme analysis. The researcher began by reading through all the responses to gain a general understanding for coding. Afterwards, the researcher initiated the coding process by organizing the major categories, themes and sub-themes from the community interaction agreements questionnaire.

The integrated conceptual framework identified in chapter 2 guided the categories, themes and sub-themes. The categories that emerged included major themes that were identified and abbreviated. Table 4.2 below provides an overview of the major themes and subthemes identified from the questionnaire data.

Table 4.5 Overview of the major themes and subthemes identified from community interaction agreement questionnaires

Major Theme	Code	Sub-Theme
Reciprocal Relationship	RR	A Knowledge Partner
		Mutual Benefit
Importance of Leadership	IOL	Institutional Leadership
Structured Interaction	SI	Regular Meetings
		Joint Projects
		Incorporated into IDP

Major Themes & Subthemes

It was essential to the study to determine how the questionnaire participants viewed the community interaction agreements. By examining their insights and perceptions of the community interaction agreements, the following themes emerged from the data:

Reciprocal Relationship

The first major theme that emerged was the concept of a reciprocal relationship between the university and the community. The following sub-themes and participant responses were documented as direct quotes from the questionnaire:

- **A Knowledge Partner**

“In order to deliver better services to its community, a Local Authority needs to know its community. Services should not be delivered based on assumptions. A Knowledge partner that provides intellectual capital available at the university, capacity building and the development needs of the Municipality would be advantage to both partners,” Municipal Administrator Respondent.

- **Mutual Benefit**

“The University can use the municipality as a study area and the community can also benefit, their development and basic needs being addressed through joint projects,” Municipal Administrator Respondent.

Importance of Leadership

The second major theme that emerged was the importance of the leadership between the university and the community. The leadership within the municipality and university sets the course, defines the structure and articulates the goals for community interaction that filters throughout their respective organization. The following sub-themes and participant responses were documented in relation to leadership:

- **Institutional Leadership**

“The Mayor and Rector acts as custodians of the MOU,” Municipal Administrator Respondent.

“Important for these major stakeholders to interact and communicate pro-actively on potential partnerships and projects that might impact on each other,” University Administrator Respondent.

Structured Interaction

The third major theme that emerged was the idea of structured interaction between the university and the municipal government. Respondents highlighted the importance of these structured interactions in terms of regularly scheduled meetings, joint municipal-university projects and how those interactions flow downward throughout each organization. The following sub-themes and participant responses were documented in relation to targeted beneficiaries:

- **Regular Meetings**

“Regular meetings are important to maintain the relationship and interaction, and to confirm that sub groups are meeting and working well. About 4 meetings are held annually,” University Administrator Respondent.

“Interactions between officials and various academic staff levels took place,” Municipal Administrator Respondent.

- **Joint Projects**

“Stellenbosch Infrastructure Task Team (SITT) for infrastructure development,” Municipal Administrator Respondent.

“The University can use the municipality as a study area and the community can also benefit, their development and basic needs being addressed through joint projects,” University Administrator Respondent.

- **Incorporated in Integrated Development Plan (IDP)**

“The projects identified are linked to IDP objectives,” University Administrator Respondent.

“Yes, only the Stellenbosch Infrastructure Task Team (SITT) projects,” Municipal Administrator Respondent.

4.3.3. Interpretational Analysis

As detailed in section 1.1, a stated research subsidiary question and objective was to investigate the impact of the local university interaction agreements in Stellenbosch and Drakenstein through perceptions of municipal and university administrators. Additionally, a stated goal of the research study was to improve the understanding of the relationship between universities and local development. The theme analysis of the community interaction agreements and the questionnaire responses led to the documentation of reoccurring patterns through a higher level analysis. As a result, the researcher identified three main patterns emerged from the questionnaires. According to Plowright, the process of abduction is needed to look into the past in order to arrive at an explanation regarding whatever is being studied (Plowright, 2011). The researcher used inferential reasoning to provide an explanation for the codified community interaction projects. The following patterns were identified:

Pattern 1: The importance of long-term collaboration within the agreements

Although there were multiple sub-themes under structured interaction, each sub-theme appeared to emphasize the idea of a long-term collaboration. The principle of sustainability was noted throughout the agreements as a fundamental underpinning for the agreements. Sustainability was used to cover multiple contexts including educational, social, economic, technological, infrastructural or ecological. Relating to sustainability, the agreements referenced a non-partisan approach to overcome obstacles with political affiliations and subsequent political agendas. This approach signaled a long-term collaboration between the university and municipalities regardless of the political party majority over time.

Other structural components of the agreements signaled long-term collaboration as well as including formalized regular leadership meetings. The importance of regular leadership

meetings was confirmed by questionnaire respondents. Furthermore, these meetings signaled a commitment by leaders of both the university and municipality that the agreement would be more than a paper exercise. The commitment of time for leadership meetings in order to guide the university and municipality interaction implied an extended time period.

Additionally, the aim of establishing joint projects that could theoretically span multiple years signaled a long-term commitment. Furthermore, the fact the projects were designed to be incorporated into the Integrated Development Plan of the municipality indicated a multi-year commitment. The integration into the municipalities' IDP was confirmed through the Stellenbosch Infrastructure Task Team (SITT) for infrastructure development and through projects with the Drakenstein Municipality.

Pattern 2: The importance of a reciprocal relationship between the university and municipality

The importance of the university as a partner of the community was emphasized through the university's motto: "your knowledge partner." Furthermore, the agreements displayed a reciprocal tone between the two institutions evidenced through language that highlighted both as beneficiaries. The community, as a beneficiary, was illustrated through a commitment to work individually and jointly in addressing community challenges. Respondents confirmed the need to deliver better services to the community using the university's intellectual capital. In addition, the university, as a beneficiary, was shown through its vision to be an active role player in the development of South African society, pursuit for greater relevance and commitment to advancing the university's HOPE project.

The term *mutual benefit* was also emphasized when discussing the pursuit of international interaction and initiatives. This signaled a commitment to a reciprocal relationship between the university and municipality when deciding joint projects to be entered into. Questionnaire respondents confirmed the mutual benefit, emphasizing that the university could benefit from the community as a study area. In addition, respondents indicated the community could benefit as well through joint projects addressing development and basic needs.

Pattern 3: The community need as the primarily background condition

All evidence from the agreements suggests that the community need was the primary impetus behind the agreements. Both texts highlight the problems within the community before addressing the commitment between the university and municipality. Within the Stellenbosch

agreement, it is noted that the community is divided, with grave socio-economic problems. The agreement also highlights problems associated with infrastructure, ecology and wealth disparities. By a broad economic policy efficiency definition, it is an established agreement calling for a market reaction to the community issues raised in which resources should be optimally allocated to serve the community in the best way possible. The Drakenstein agreement is similar, thus labeling the community as divided with the same socio-economic, infrastructure and ecological problems. Furthermore, it is suggested that the university and municipalities will work jointly so that the municipalities can meet their responsibility to address their challenges. Again, this was confirmed by respondents who noted the need to deliver better services to the community using the university's intellectual capital.

Furthermore, the emphasis on the community's need directs the agreements away from the reciprocal relationship outlined in pattern two. Although both communities' needs are well-documented, the university's need beyond highlighting its desire to be an active role player in the development of South African society and pursuit for greater relevance is largely absent. The university could have emphasized the importance of research projects, practical learning opportunities and service-based learning within the community. Similarly, the university's need for integration of research topics, participants and programs from the community could have been discussed. Furthermore, the university's need for community interaction projects and volunteer opportunities to enhance student growth outside the classroom might have been included as well.

4.4 Phase 2: Social Impact Analysis

The next phase of the research study documented the university's community interaction efforts. It is important to note that the term *community engagement* (CE) is used synonymously in this study with Stellenbosch University's chosen definition of community interaction. Both terms are used to encompass the wide-ranging forms of contact between the university and the surrounding communities. Stellenbosch University uses the term *community interaction* as opposed to the more common term of community engagement to emphasize the reciprocal relationship between the community and the university. However in South Africa, most HEIs use the more common term of community engagement and the Higher Education Quality Commission's definition as "initiatives and processes through which the expertise of the institution in the areas of teaching and research are applied to

address issues relevant to its community” (Higher Education Quality Committee/ JET Education Services South Africa, 2007, p.3). Similar to phase one in terms of scope, the aim of phase two sought to determine if there was a measurable community impact of Stellenbosch University’s interaction agreements in relation to the municipalities of Stellenbosch and Drakenstein. The method used to achieve this was questionnaires that were developed based on the existing community interaction project database and the original agreements signed in 2007 (Stellenbosch) and 2011 (Drakenstein).

4.4.1. Database & Document Sources

The social impact phase also included the review of numerous documents and databases related to the university’s community interaction efforts. The sources included Stellenbosch University’s community interaction database, the community interaction annual report, the HOPE project and the book *Sustainable Stellenbosch – Opening Dialogues*. These sources, combined with the questionnaire data, assisted the researcher by displaying a more comprehensive picture of the university’s community impact. Furthermore, the documents assisted with the data triangulation of the questionnaire responses.

4.4.2. Community Interaction Projects Analysis

Narrative data was collected from the community interaction project questionnaires and analyzed through a theme analysis, along with data from community interaction projects, the book *Sustainable Stellenbosch – Opening Dialogues*, and the Stellenbosch University Hope Project. Information from the community interaction project questionnaires and source documents are displayed in the following sections.

4.4.2.1. Theme Analysis

The narrative responses from the community interaction project questionnaires were first summarized through theme analysis. The questions related to the community interaction agreements and the community interaction projects carried out by the university. First, this was attained by reading through all the responses to interpret meaning and to gain a general understanding for coding.

Next, the researcher began the coding process by organizing the major categories, themes and sub-themes from the community interaction agreements questionnaire. The process of coding the data began soon after the first surveys responses were received. The researcher read

through all the responses to interpret meaning and gain a general understanding for coding. The process included an interpretive viewpoint as categories were allowed to emerge from the data. The categories that emerged included major topics that were identified and abbreviated. Furthermore, during the coding process, similar issues were combined and sorted into columns in order to develop themes and sub-themes. Table 4.3 below provides a summary of the major themes and subthemes identified from the questionnaire data.

Table 4.6 Summary of the major themes and subthemes from community interaction projects questionnaires

Major Theme	Code	Sub-Theme
Community as Beneficiary	CAB	Skills Development
		Creating Awareness
		Support Local Economy
Measurable Impact	MI	Training & Research
		Professional Development

It was important to define how the questionnaire participants viewed the community interaction programs and associated projects. By examining their perceptions and conceptualization of the community interaction programs and associated projects, the following themes emerged from the data:

Community as Beneficiary

The first major theme that emerged was the idea of the community as the primary beneficiary when the importance of each community interaction project was discussed. While the stated explanations differed, respondents overwhelmingly perceived the beneficiary to be the community. The following sub-themes and participant responses were documented in relation to the community as a beneficiary:

- **Skills Development**

“Develop flexible number concept and counting skills, develop understanding of our number system,” Community Interaction Project Leader.

“Attend workshops and interact with faculty member and students, manipulatives are donated to schools that have a need for it,” Community Interaction Project Leader.

“The physical science grade 12 results are improved. Learners are motivated to take up tertiary studies in SET careers. Learners are assisted in obtaining financial assistance for their tertiary studies,” Community Interaction Project Leader.

“Developing of Xhosa literacy skills in pre-school and primary level,” Community Interaction Project Leader.

“The learners understanding of the work can be tested using pre and post-tests,” Community Interaction Project Leader.

- **Creating Awareness**

“Especially on a health level, I think there is a higher awareness among communities in the region to take care of their health. Education is also affected and the social stigmas are highlighted more in certain locations,” Community Interaction Project Leader.

“By creating awareness about mental health issues and prompt referral of callers/e-mailers to the MHIC to mental health professionals, support groups, etc., we are getting those in need of help to appropriate care as soon as possible, thereby limiting suffering. We measure the impact we have by logging all calls / e-mails on a daily basis,” Community Interaction Project Leader.

“The program is still being mainstreamed to involve general people of the community. The project will also be adapted to include two other projects to lift the profile of the work and increase public awareness and participation,” Community Interaction Project Leader.

“It fosters an art awareness among the learners that culminate in the development of a visual memory,” Community Interaction Project Leader.

- **Support Local Economy**

“Grow the small businesses within the community,” Community Interaction Project Leader.

“The project assists entrepreneurs with the development of their financial management skills, within a greater entrepreneurial development project. The impact is that the entrepreneurs ought to better manage the finances of their business, make better financial related business

decisions, which could help improve profitability and create employment if the business grows,” Community Interaction Project Leader.

“The community development module operates in 11 organizations and it primarily has a research outcome. The research conducted benefits the organizations (ranging from NGO's to pre-schools, to rehabilitation centres). The explicit aim of the research is to address a need organizations identify that will help them to improve quality of services,” Community Interaction Project Leader.

“Participants in the project/training program generate income,” Community Interaction Project Leader.

“The project is aimed at empowering school-leavers and young unemployed people, and this can be measured through the number of people who acquire certain skills and are absorbed into the job market,” Community Interaction Project Leader.

Measurable Impact

The second major theme that emerged was the idea of a measurable impact when the importance of each community interaction project was discussed. Respondents pointed to measurable impacts through practical training, professional development and research data. The following sub-theme and participant responses were documented in relation to the measurable impact:

- **Training & Research**

“Opportunity to implement theory done in class, use manipulatives made in 2nd year, to hone skill of developing number concept (not always time to do this during normal school practice),” Community Interaction Project Leader.

“Qualitative data from interviews, quantitative data from learner results,” Community Interaction Project Leader.

- **Professional Development**

“A professional development survey is carried out for the students to see the impact the internships have on skills development. In addition, the industry partners and mentors provide feedback on their interactions with the students. Most of the students end up working for the wine industry,” Community Interaction Project Leader.

4.4.3. Community Interaction Projects Numerical Analysis

In addition to narrative data, numerical data was collected from the community interaction database, document sources and questionnaire respondents regarding the impact of the community interaction projects. Information from the community interaction database, document sources and questionnaire respondents is displayed below.

4.4.3.1. Stellenbosch University Community Interaction Database

Stellenbosch University contributes to civic participation and community involvement within local municipalities, the Western Cape Province, South Africa and internationally through multiple community interaction projects. Community interaction projects are identified by Stellenbosch University according to the following criteria: the activity must be linked to an identifiable group in the community, linked to identifiable needs of both the university and community and it must be a sustained activity within a mutually defined partnership (Stellenbosch University Division for Community Interaction, 2013). Coordinated under the SU Office of Community Interaction, there were an overall total of 177 community interaction projects throughout the university in 2012 from almost every faculty within the university as indicated in figure 4.1 below (Stellenbosch University Division for Community Interaction, 2013).

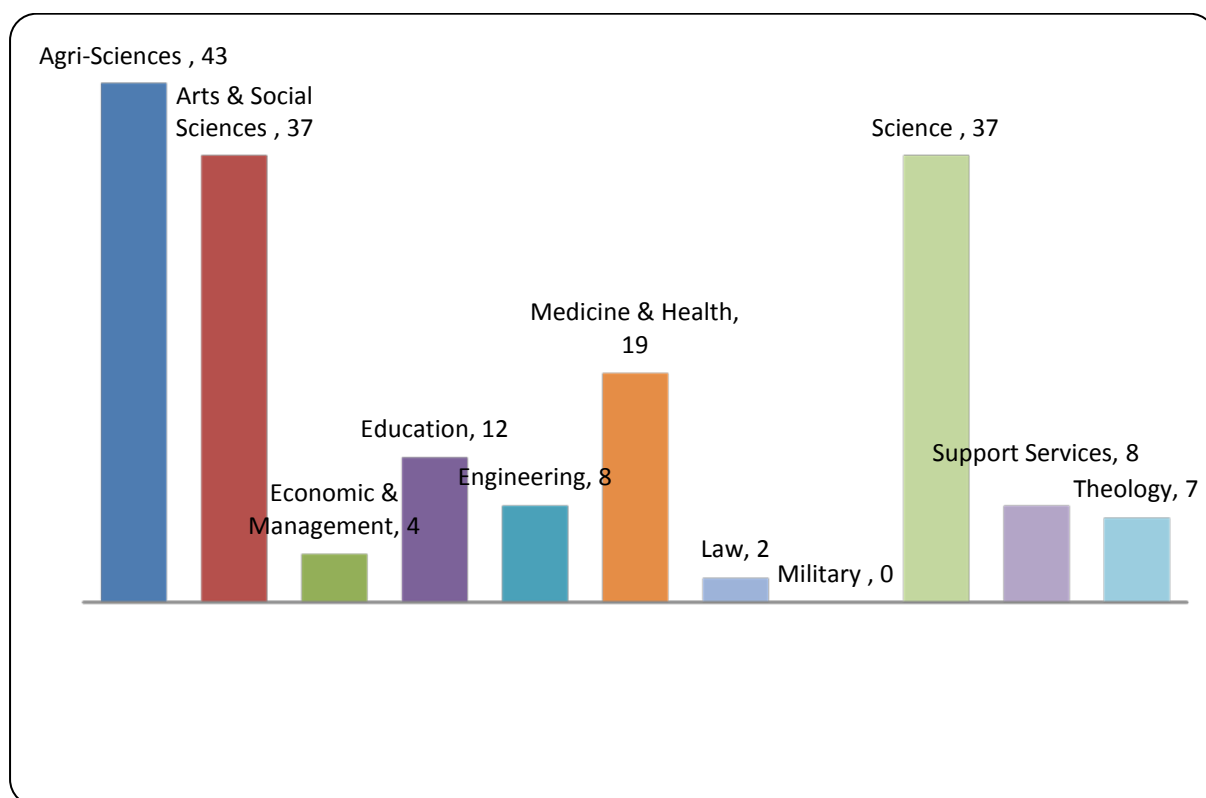


Figure 4.18 Community interaction projects by faculty, 2012

Source: (Stellenbosch University Division for Community Interaction, 2013)

A total of 177 projects were registered by project leaders within the university's community interaction database for 2012. The geographical target of the projects ranged from the Stellenbosch University campus to international locations. Displayed in figure 4.2 below,

research showed that 41 percent of the total number of projects targeted the municipalities of Stellenbosch and Drakenstein.

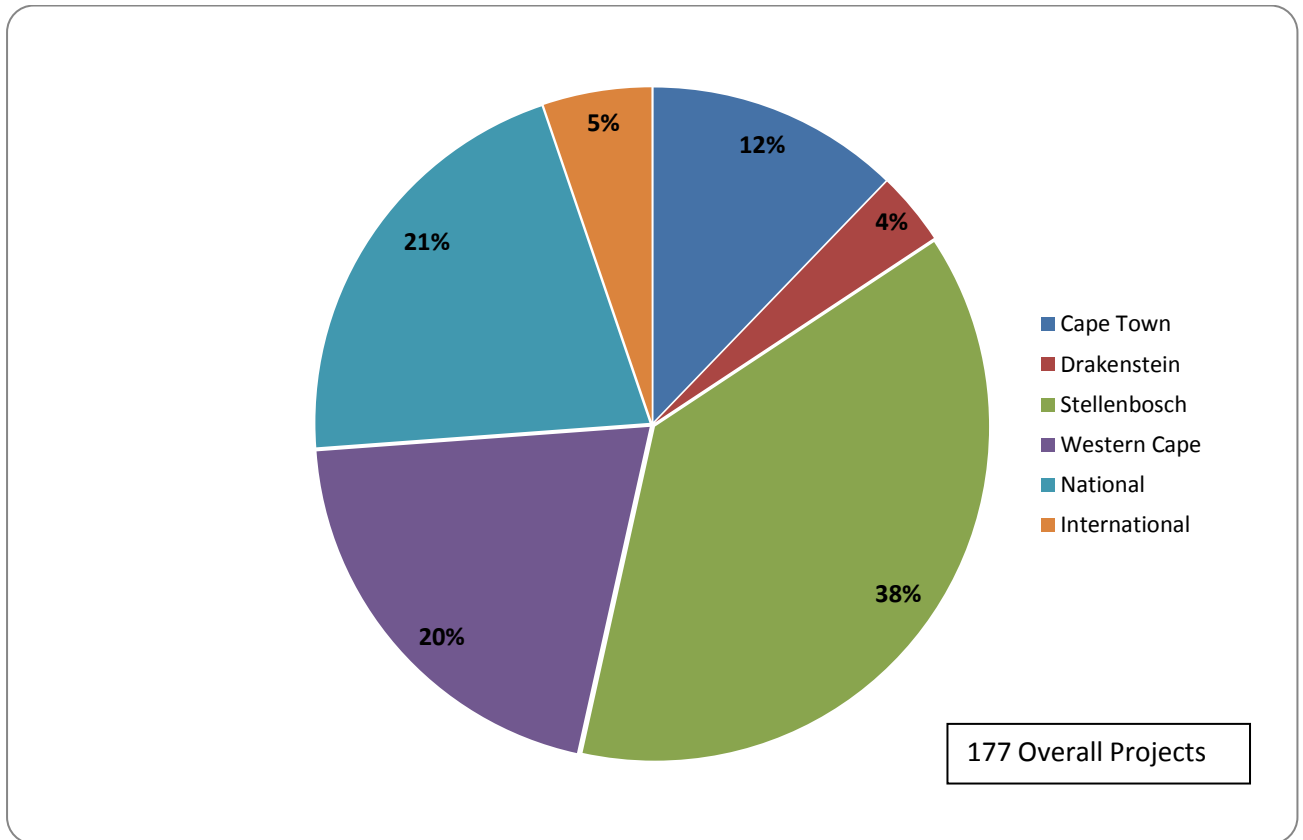


Figure 4.19 Community interaction projects by geographic location, 2012

Source: (Stellenbosch University Division for Community Interaction, 2013)

Furthermore, the primary functions of the projects included: career advice, consulting, direct service, education, facilitation, research and training. As displayed in figure 4.3 below, 93 projects or 52percent, dealt with direct service or training.

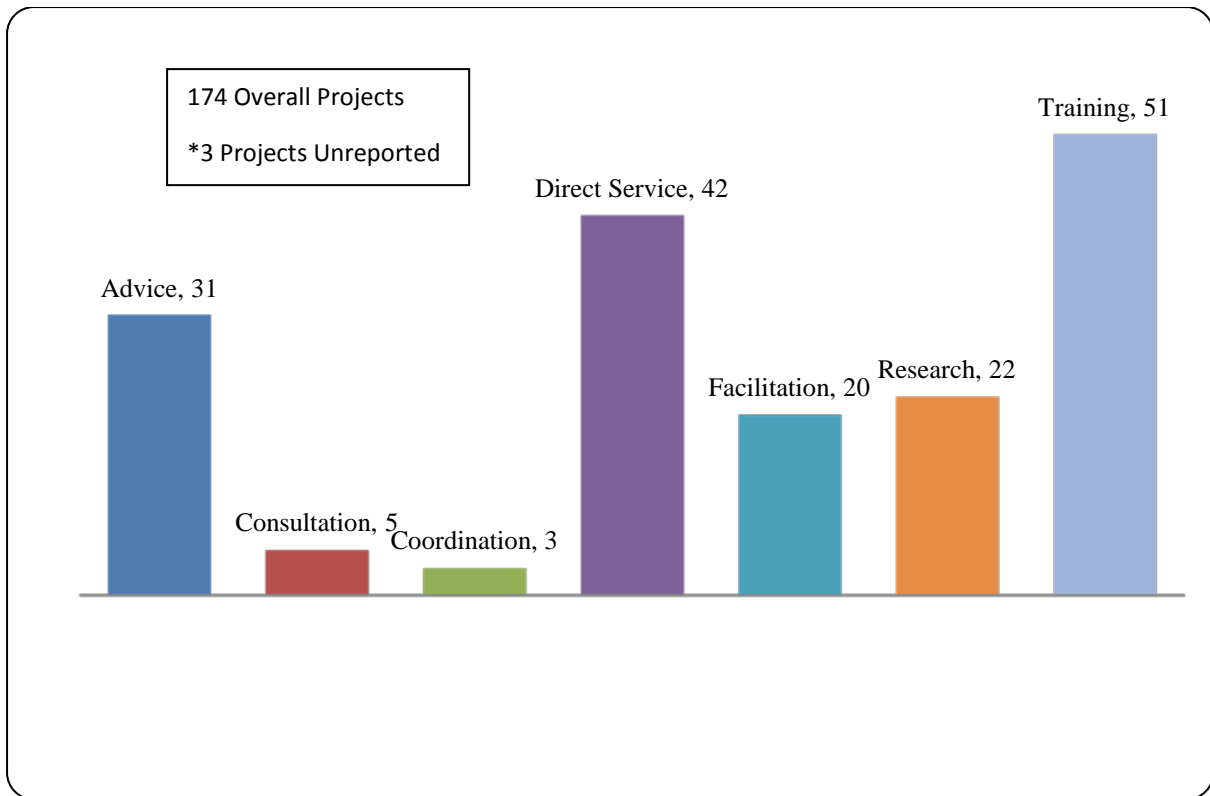


Figure 4.20 Community interaction projects by primary function, 2012

Source: (Stellenbosch University Division for Community Interaction, 2013)

The primary target groups for the community interaction projects were significantly aimed at the community. As figure 4.4 illustrates, 76 percent of the projects primarily targeted community adults or children. The remaining target groups included industry consisting of 13 percent, university students at 6 percent and researchers at 4 percent.

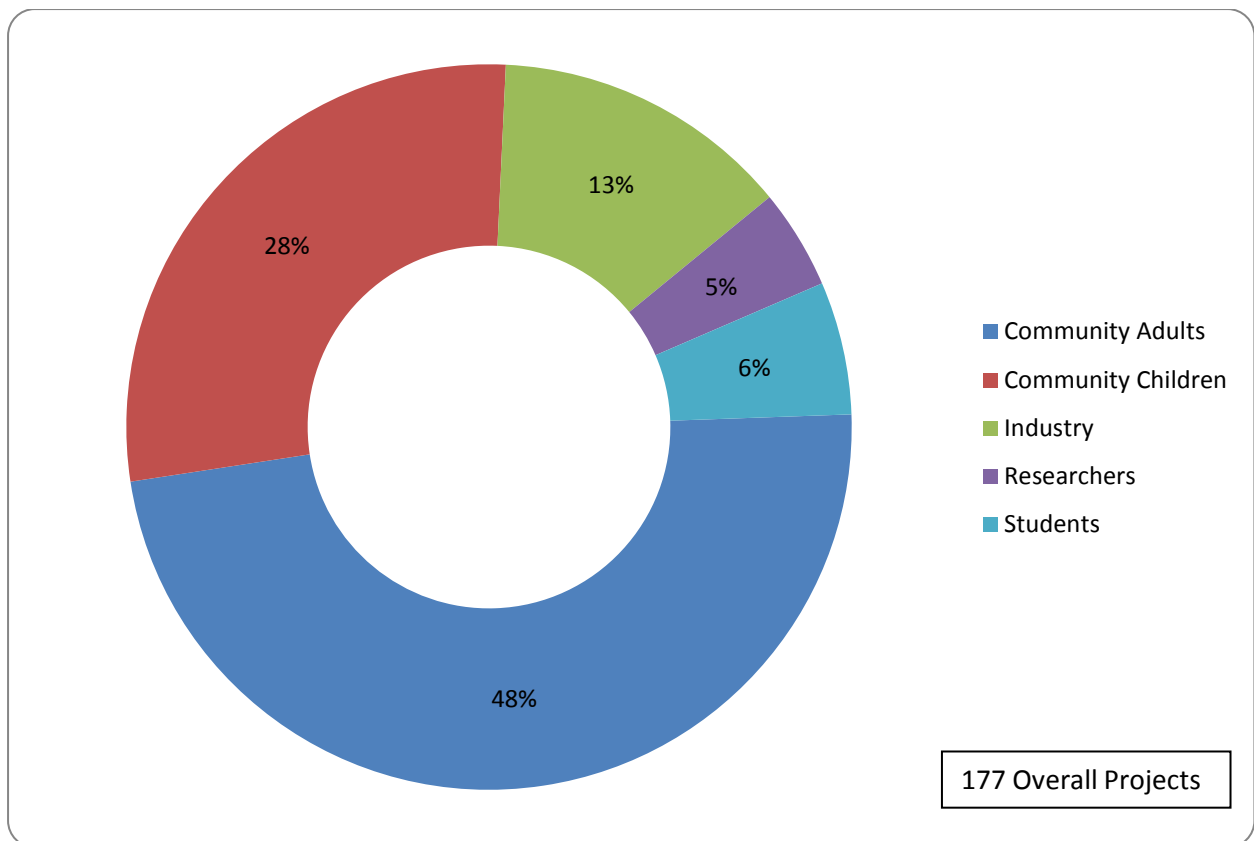


Figure 4.21 Community interaction primary target groups, 2012

Source: (Stellenbosch University Division for Community Interaction, 2013)

From the 177 community interaction projects, project leaders estimated the primary target participants and the secondary target group participants. The primary target participants included over 6 million participants while the secondary participants included nearly 3 million for a total of over 9 million estimated participants overall. Table 4.4 illustrates the estimated target populations for the community interaction projects.

Table 4.4 Estimated community interaction target population participants

Target Population	Estimated Participants
Primary	6,206,981
Secondary	2,947,225
Overall Count	9,154,206

Source: (Stellenbosch University Division for Community Interaction, 2013)

Additionally, the community sectors involved in the 2012 community interaction projects which included: agriculture, central government, culture, economy, education, health, local authority, religion, safety and security and welfare. An overwhelming 41% of projects involved education while 19% included agriculture and 13% health as far as the top three. Figure 4.5 displays the various types of sectors involved in the community interaction projects and their prevalence.

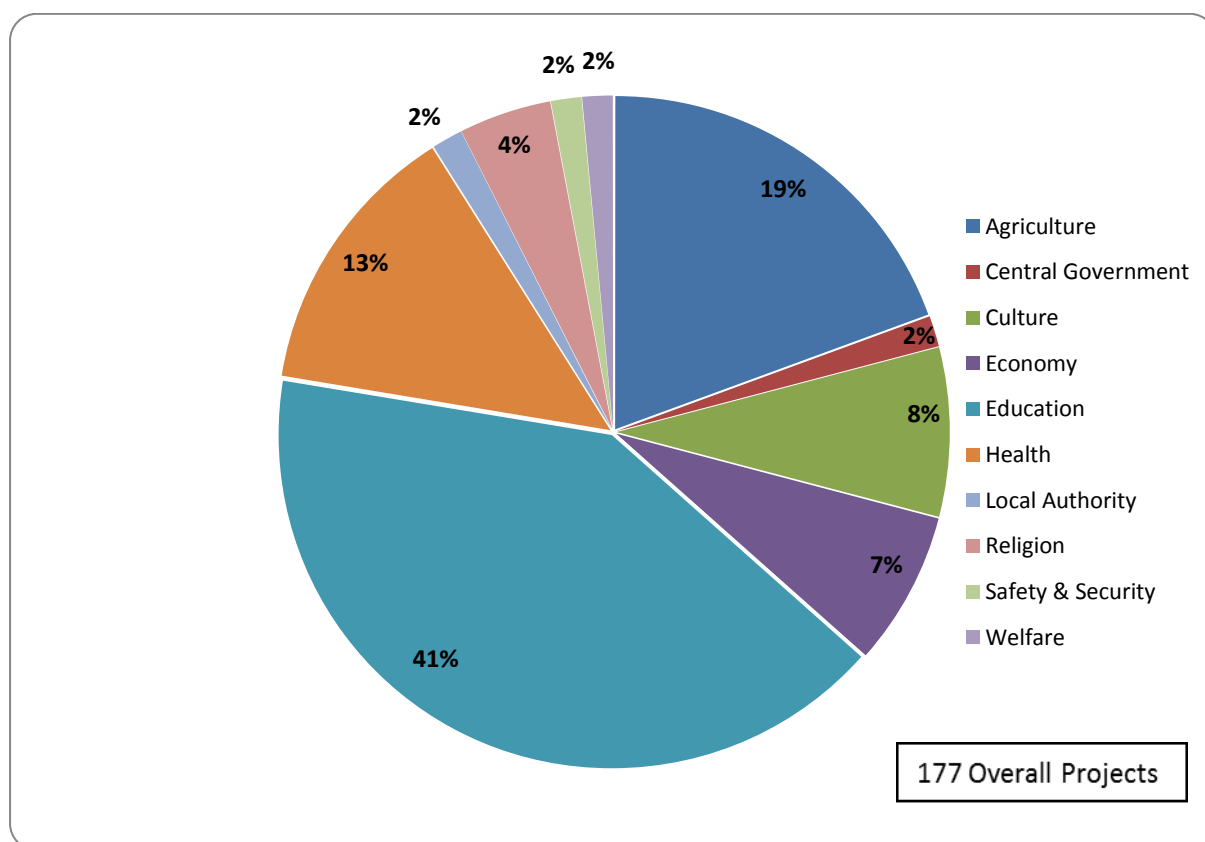


Figure 4.22 Community sectors involved in interaction projects, 2012

Source: (Stellenbosch University Division for Community Interaction, 2013)

The community interaction projects were also categorized by the type of impact as identified by the project leaders. The type of impacts included empowerment, prevention/proactive, progressive and therapeutic. This information was categorized and supplied by the Stellenbosch University Office of Community Interaction from the SU community interaction data base. Additional information regarding the categorization of these community

interaction projects can be found on the Stellenbosch University Office of Community Interaction website (Stellenbosch University Division for Community Interaction, 2013). Of the community interaction projects categorized, the results are illustrated in figure 4.6 below.

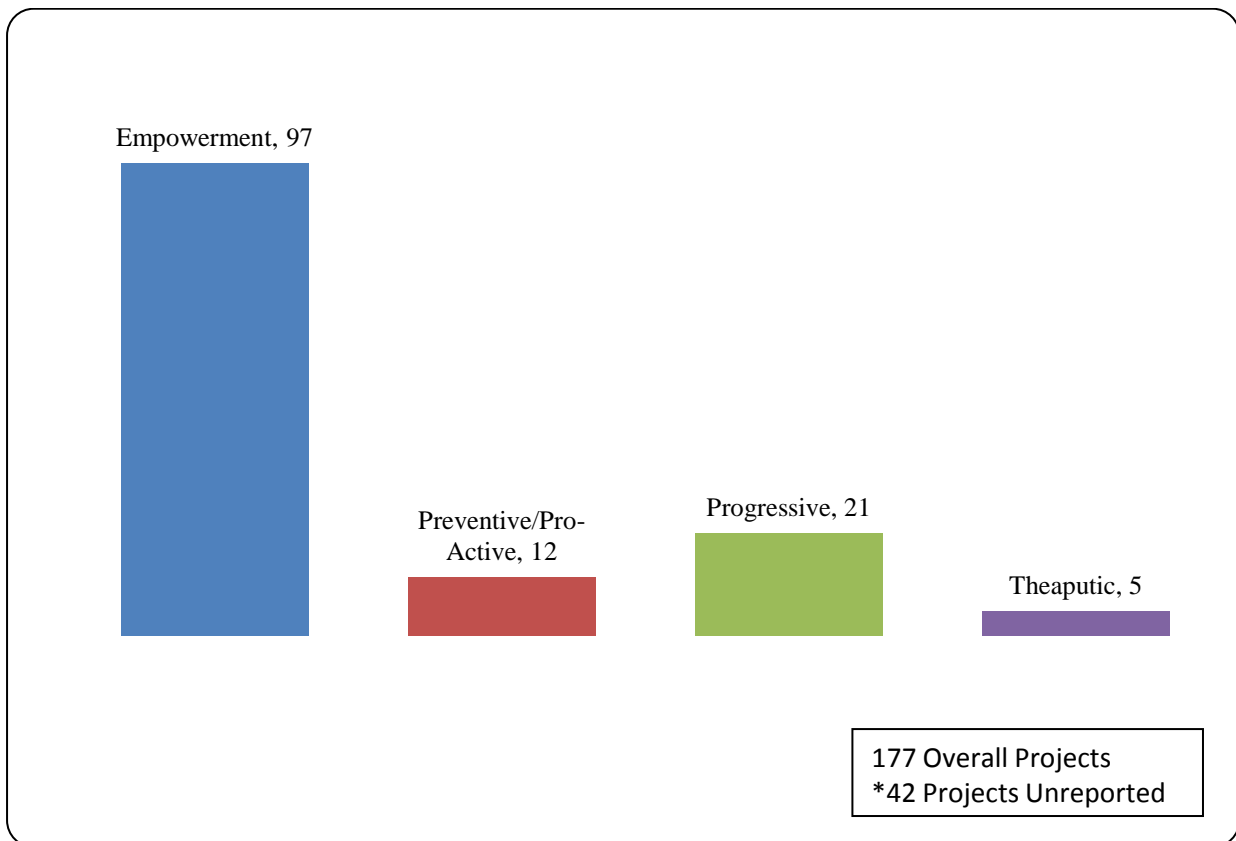


Figure 4.23 Type of community interaction project impact, 2012

Source: (Stellenbosch University Division for Community Interaction, 2013)

In addition to the school partnership project discussed later in section 4.4.2, approximately 75 community interaction projects focused on schools or included school components. Figure 4.7 details the community interaction projects with a focus on schools.

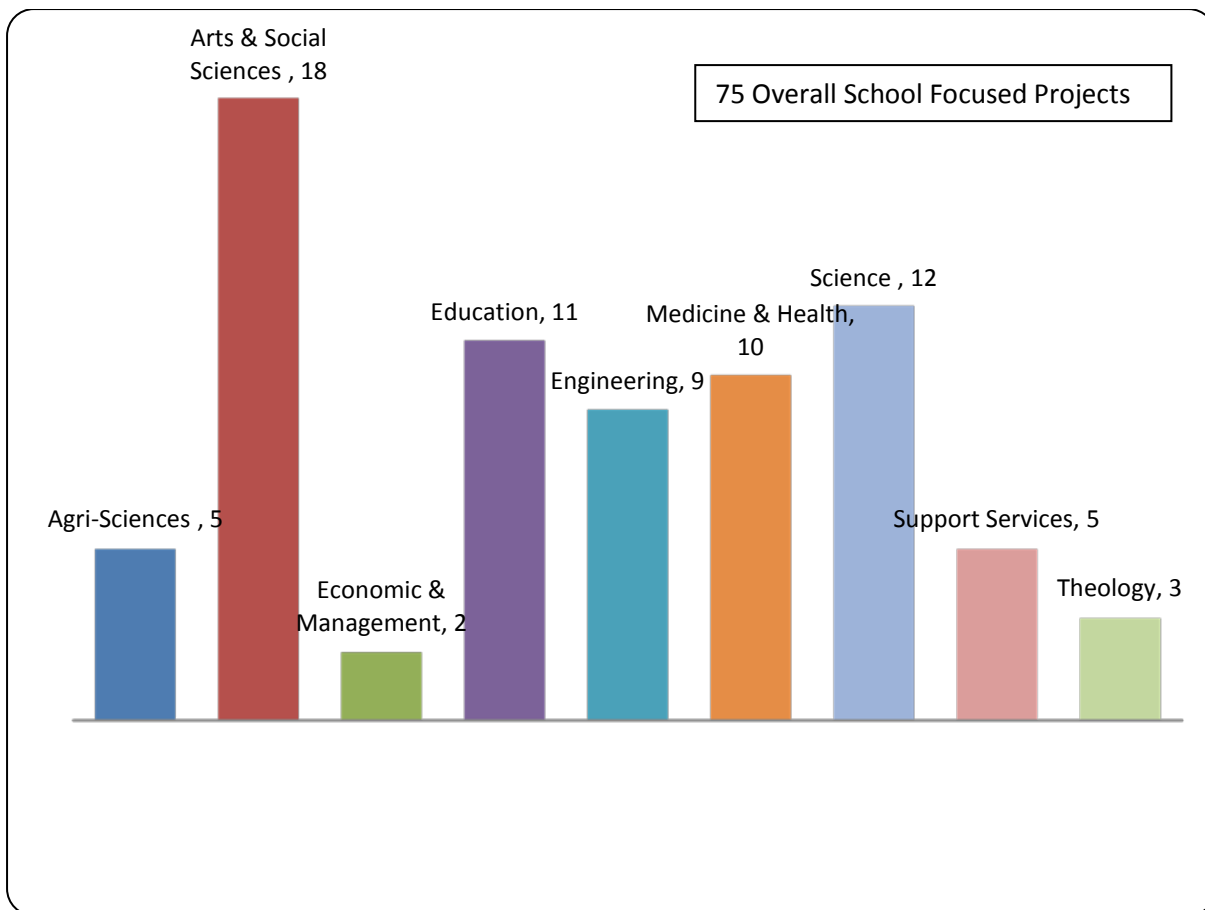


Figure 4.24 Community interaction projects focused on schools by faculty

Source: (Stellenbosch University Division for Community Interaction, 2013)

The community interaction projects also included service learning projects. Service learning projects are characterized by academic components and a balance with beneficiaries as outlined in section 2.3.2. Figure 4.8 describes the service learning projects by faculty.

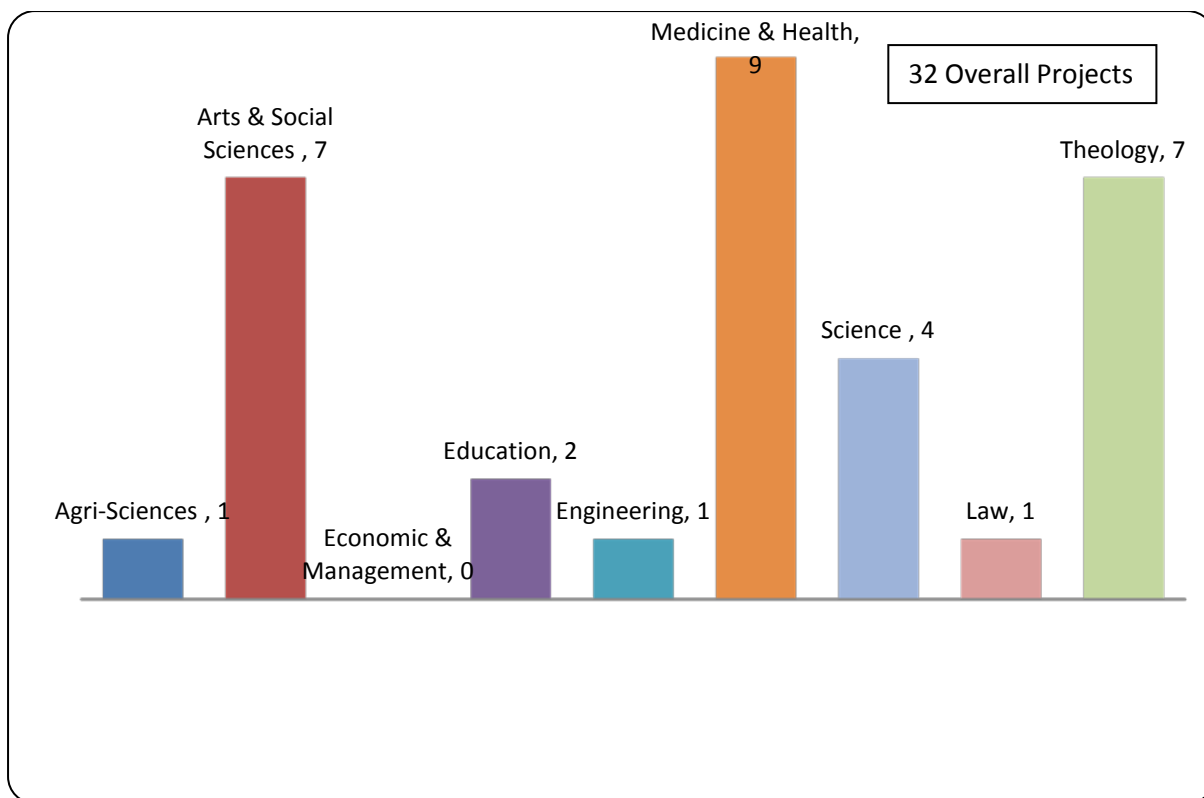


Figure 4.25 Community interaction projects focused on schools by faculty

Source: (Stellenbosch University Division for Community Interaction, 2013)

Table 4.5 details the total number of community interaction participants by undergraduate, graduate, academic, volunteers and staff.

Table 4.5 Community interaction projects staff and student participants

Category	Number of Staff & Students
Undergraduate Students (academic)	1,488
Undergraduate Students (volunteer)	517
Graduate Students (academic)	97
Graduate Students (volunteer)	151
Staff	813

Overall Participants	3,066
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Source: (Stellenbosch University Division for Community Interaction, 2013)

4.4.3.2. Questionnaire Analysis

The electronic questionnaire had a response rate of 27 percent from the original 77 participants regarding the impact of the community interaction projects. Although low, the response rate was deemed acceptable as the purpose was not to project responses based on a larger population but to measure the sample population. Some of the questions used a Likert scale to collect ordinal data regarding perceptions while other questions requested outcome related numerical data regarding project participants. The information from the questionnaires is displayed visually in Table 4.6 later in this section.

Question two of the questionnaire aimed to measure the respondent's perception of importance for the Stellenbosch University interaction project, program or initiative they are participating in within the scope of this study. On a Likert scale, the respondent was asked to rank the following statement: The Stellenbosch University community interaction project, program or initiative that I am involved with has a measurable community or economic impact. A combined 72 percent of respondents strongly agreed or agreed that the community interaction project, program or initiative they were involved in has a measurable community or economic impact.

Question four aimed to test the intended equity of the interaction agreements and to examine the historical view that community engagement activities as mainly paternalistic. This question tested the project leader's perception of reciprocity between the university and the community. On a Likert scale, the respondent was asked to rank the following statement: The Stellenbosch University community interaction project, program or initiative that I am involved with primarily benefits Stellenbosch University students, faculty and staff. A combined 57 percent of respondents disagreed agreed or strongly disagreed that the community interaction project, program or initiative they were involved primarily benefits Stellenbosch University students, faculty and staff.

Question five tested the project leader's perception of the community as the primary beneficiary. On a Likert scale, the respondent was asked to rank the following statement: The Stellenbosch University community interaction project, program or initiative that I am

involved with primarily benefits the community defined as “groups of people united by a common location, or to groups of people that are linked intellectually, professionally, and/or politically; that is, geographic communities, communities of interest and communities of practice.” An overwhelming 91 percent of respondents agreed or strongly agreed that the community interaction project, program or initiative they were involved primarily benefits the community.

Question six tested the project leader’s perception of mutual benefit between the university and the community. On a Likert scale, the respondent was asked to rank the following statement: There is a mutual benefit and sense of reciprocity between the Stellenbosch University community interaction projects, programs or initiatives that I am involved in and the community defined as “groups of people united by a common location, or to groups of people that are linked intellectually, professionally, and/or politically; that is, geographic communities, communities of interest and communities of practice.” From the 20 overall responses, 86 percent of respondents agreed or strongly agreed that the community interaction project, program or initiative they were involved had a mutual benefit and sense of reciprocity between the university and the community.

Table 4.7 Community interaction project findings from participant responses

	Statement	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
		%				
2	The Stellenbosch University community interaction project, program or initiative that I am involved with has a measurable community or economic impact.	29	43	5	10	13
4	The Stellenbosch University community interaction project, program or initiative that I am involved with primarily benefits Stellenbosch University students, faculty and staff.	10	19	14	38	19
5	The Stellenbosch University community interaction project, program or initiative that I am involved with primarily benefits the community defined as “groups of people united by a common location, or to groups of people that are linked intellectually, professionally, and/or politically; that is, geographic communities, communities of interest and communities of practice.”	43	48	5	5	2
6	There is a mutual benefit and sense of reciprocity between the Stellenbosch University community interaction projects, programs or initiatives that I am involved in and the community defined as “groups of people united by a common location, or to groups of people that are linked intellectually, professionally, and/or politically; that is, geographic communities, communities of interest and communities of practice.”	38	48	9	5	0

The aim of question seven was to cross triangulate primary target group participation in the university’s community interaction projects. The community interaction project database

contained reporting information for initial primary target population only and this question sought to determine if initial primary target group estimates matched actual results. Respondents were asked to answer the following question: Based on the reported number of people estimated in your primary group target, please share how many actual people participated in 2012. For the community interaction project leaders surveyed, a total of 50,089 participants were listed as actual primary target group with a mean of 2,504 and a standard deviation of 11,200. When compared to the community interaction database primary target group estimates for each project, a total of 2,923,033 participants were estimated as the primary target group with a mean of 16,060 and a standard deviation of 110,227. Table 4.7 below compares the target populations below.

Table 4.7 Comparison of estimated and actual primary target populations

Target Population	Overall Participants	Mean	Standard Deviation
Estimated Primary	2,923,033	16,060	110,227
Actual Primary	50,089	2,504	11,200

Similar to question seven, the goal of this question (question 8) was to cross triangulate secondary target group participation in the university's community interaction projects. The community interaction project database contained reporting information for initial secondary primary target population only and this question sought to determine if initial secondary target group estimates matched actual results. Respondents were asked to answer the following question: Based on the number of people estimated in your secondary group target, how many actual participants were there in 2012? For the community interaction project leaders surveyed, a total of 21,237 were listed as actual secondary target participants in 2012.

Question nine was designed to determine how many of the community interaction projects targeted racially segregated and socio-economically disadvantaged communities. The researcher identified this metric as important based on the community needs and transformation objectives outlined in the community interaction agreements. Respondents were asked to answer yes or no to the following question: Is the primary or secondary group target of your project located in a township as defined by a racially segregated and/or socio-economically disadvantaged community (ex. Kayamandi, Mbekweni, etc)? For the

community interaction project leaders surveyed, a total of 76 percent responded that their project was located in a township as defined by a racially segregated and/or socio-economically disadvantaged community.

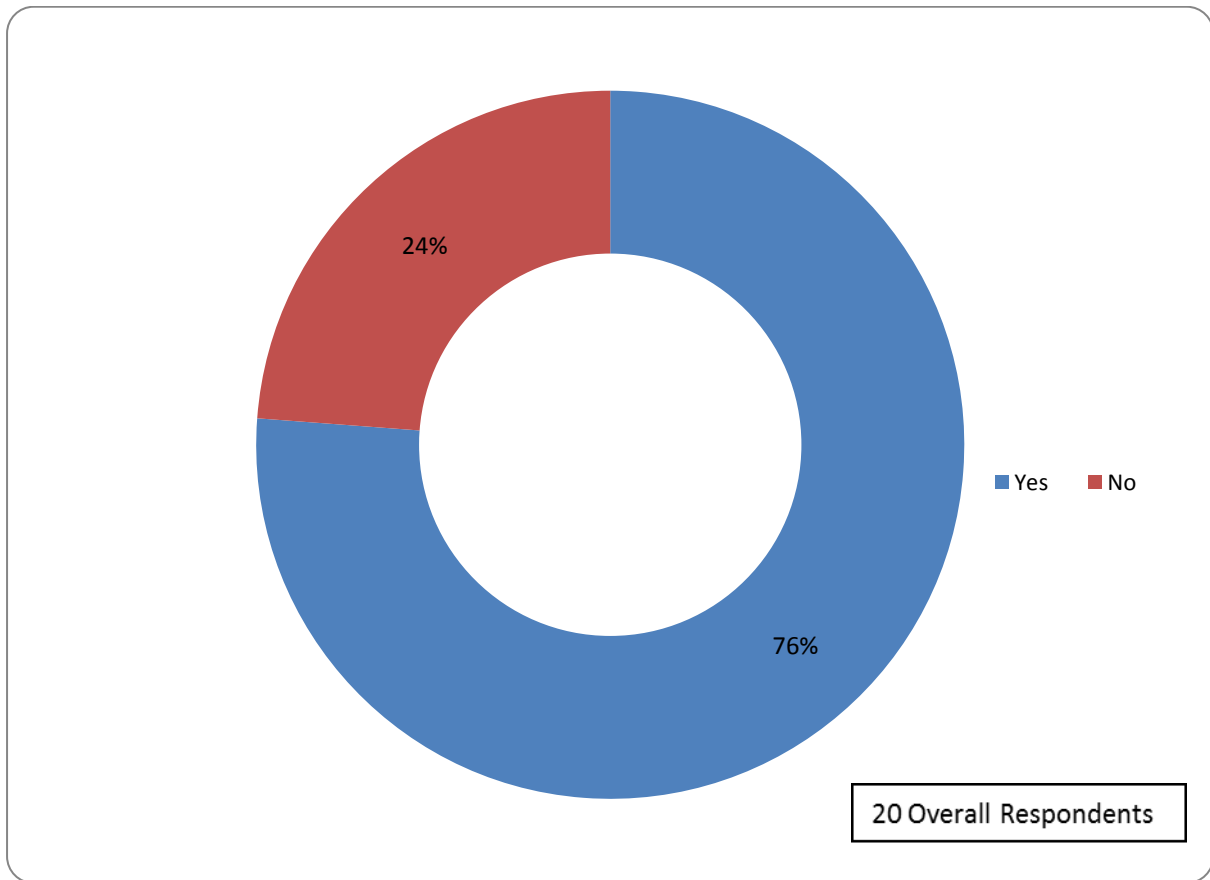


Figure 4.9 Percentage of respondents indicating projects located in townships

Question ten was designed to capture the estimated cost of providing the community interaction project. This information was important to collect because costs including non-university paid or volunteer market wages, materials, transportation costs are often not captured as part of overall community interaction project. Respondents were asked to estimate total costs with the following question: Please estimate the total cost of providing the community interaction project in terms of non-university paid or volunteer market wages, materials, transportation costs, etc for 2012. For the community interaction project leaders surveyed, a total of R17,936,150 was reported in total costs with a median cost of R18,500 per project.

4.4.4. Interpretational Analysis

As detailed in section 1.1, a stated research subsidiary question and objective was to investigate the social impacts of the community interaction agreements by analysis of the community interaction project database and through project leaders that are actively involved in community interaction programs. Additionally, a stated goal of the research study was to improve the understanding of the relationship between universities and local development. The theme analysis of the community interaction database and questionnaire responses led to the documentation of reoccurring patterns through a higher level analysis. The researcher used inferential reasoning to provide an explanation for the codified community interaction projects. The following patterns were identified:

Pattern 1: Projects primarily designed and conducted for community benefit

One of the major patterns that emerged from the questionnaires was the idea that the projects were primarily designed and conducted for the community's benefit. This corresponded with the pattern of community need outlined in the phase one interpretational analysis. While dependent on the views of the project leaders, the evidence overwhelmingly pointed to the community as the primary beneficiary.

Within the narrative analysis, the respondents explanations differed but generally discussed skills development, creating awareness and supporting individuals in the local economy in terms of community benefit. In terms of skills development, academics and university staff played a vital role setting up many of the community interaction projects outside of their regular work load. These interactions included workshops, training seminars and literacy development designed to benefit community members. Many of the university's awareness efforts focused on health related issues. The university's health awareness outreach is highlighted by three major flagship projects including Africa Centre for HIV/AIDS Management, Desmond Tutu Centre for Tuberculosis Research and Ukwanda Centre for Rural Health. In support of individuals in the local economy, the responses also united with the conclusions of the book *Sustainable Stellenbosch – Opening Dialogues* including the need for meaningful partnerships between Stellenbosch Municipality, the Western Cape Provincial Government, Stellenbosch University, the business community and civic organizations to develop a compelling vision and act upon that vision (Swilling et al., 2012).

Questionnaire results from respondents also suggest that projects were primarily designed and benefited the community. An overwhelming 94 percent of respondents agreed or strongly agreed that the community interaction project, program or initiative they were involved primarily benefited the community. In addition, a total of 177 projects were registered by project leaders within the university's community interaction database for 2012 with 54 percent of the projects located within the municipalities of Stellenbosch and Drakenstein. Survey respondents also reported that 75 percent of projects were located within townships and a total of R17,847,150 was reported in terms of non-university paid or volunteer market wages, materials, and transportation costs for community interaction projects in 2012.

Pattern 2: SU Community interaction projects had a measurable social or economic impact on the community

Another pattern that emerged from the community interaction project leader questionnaires was the measurable impact that the community interaction projects had. 76 percent of respondents strongly agreed or agreed that the community interaction project, program or initiative they were involved in has a measurable community or economic impact. For the community interaction project leaders surveyed, a total of 50,089 participants were listed as actual primary target group and a total of 21,237 actual secondary target participants were listed in 2012. The explanations, again, differed from the narrative and numerical analysis; however, the measurable impact was shown through questionnaire responses, the community interaction database, and university documents.

Questionnaire respondents pointed to measurable impacts through practical training, professional development and research data. Some of the results from practical training occurred through the ability to implement theory from class and increased test scores. Furthermore, questionnaire respondents noted specific skills development activities that targeted grade 12 learners to primarily benefit the individual and secondarily to recruit them for admission into the university. This aligned directly with the Schools Partnership Project and Hope@Maties venture aimed at recruiting top matriculates to Stellenbosch University (Stellenbosch University, 2013b). In 2012, the program welcomed 104 of the participants as registered students of the university, of which 81 received recruitment bursaries (Stellenbosch University, 2013b). Respondents also noted measurable professional development survey results and the impact it has on skills development. In addition, it was reported that interactions with industry partners and mentors often led to work within the industry. In terms

of measurable research data, the narrative responses aligned with Stellenbosch University's HOPE Project aim to use its state-of-the-art facilities with the finest knowledge experts available to conduct research within a local, regional and African continent context (Stellenbosch University, 2013d).

4.5 Phase 3: Economic Impact

The community interaction agreements between Stellenbosch University and the Stellenbosch and Drakenstein municipalities specifically call for collaboration between SU and the municipalities towards “sustainable local economic development” (Stellenbosch University, 2007). As a result, the final phase of the study sought to measure the economic impact of the community interaction agreements. The approach aligned with the traditional method outlined in other university economic impact studies based on institutional exports such as direct expenditures, payroll and a range of multipliers extrapolated throughout the local economy (Blackwell et al., 2002). The first part of this phase examined the university's operational impact including direct expenditures, total payroll and taxes paid. In addition, it included revenues from research generated by university owned companies. The source documents included the Stellenbosch University 2012 annual report, Stellenbosch University Division for Institutional Research and Planning institutional data, Stellenbosch University's 2012 community interaction annual report and the Innovus 2012 annual report. The second part of this phase used two cross-sectional web based self-administered questionnaires with participants chosen at random, to quantify student spending (non-university related), faculty/staff tax payments and visitor spending. Finally, the total economic effect was calculated by accounting for the various operational impacts combined with students, faculty and staff local expenditures.

4.5.1. Development of Human Capital

Higher education institutions primarily contribute to human capital development through teaching, learning and research. As one of 23 tertiary institutions in South Africa, Stellenbosch University is located in the heart of the picturesque Cape Winelands (Stellenbosch University Division for Institutional Research and Planning, 2013). Stellenbosch University is considered one of the top research universities on the African continent. A statement confirmed by Stellenbosch University being featured in two university world rankings for the past two consecutive years (Stellenbosch University Division for

Institutional Research and Planning, 2013). In addition, the university has been recognized as the institution with the highest scientific publication output per academic staff member in South Africa in the past three years (Stellenbosch University Division for Institutional Research and Planning, 2013).

4.5.1.1. Teaching and Learning

Human capital development takes place in many forms at Stellenbosch University. However, at most higher education institutions including Stellenbosch human capital development is accomplished primarily through one of the university's core missions of teaching and learning.

In 2012, a total of 27,823 students were enrolled at Stellenbosch University. The total enrolment population comprised 16,932 or 61 percent undergraduate students, 9,853 or 35 percent graduate students and 1,038 or 4 percent special students. Special students are those students who are enrolled in only a few modules and are generally considered non-degree seeking students. The enrollment and demographic data for Stellenbosch University is displayed in table 4.8 below.

Table 4.8 Stellenbosch university enrollment 2002 – 2012

Year	Undergraduate	Postgraduate	Special Students	Overall Count
2002	13269	7576	479	21324
2003	13875	7458	546	21879
2004	13446	7829	697	21972
2005	13863	7408	811	22082
2006	14173	7420	976	22569
2007	14789	7741	909	23439
2008	15219	8427	1040	24686
2009	15869	9233	1141	26243
2010	16524	10043	1127	27694
2011	17051	10043	1099	28193
2012	16932	9853	1038	27823

Source: (Stellenbosch University Division for Institutional Research and Planning, 2013)

Historically known as a white Afrikaans institution, Stellenbosch University has undergone an enormous student demographic shift since the 1994 watershed democratic elections. From

1990-1999 the university awarded 3,633 degrees and diplomas to non-white students namely Coloured, Black and Indian (Stellenbosch University Division for Institutional Research and Planning, 2013). However, over the same length of time (from 2000-2009) the university awarded 13,317 degrees and diplomas to non-white students an increase of over 366 percent (Stellenbosch University Division for Institutional Research and Planning, 2013). In addition, total enrolments of Coloured, Black and Indian students have increased from 1,923 or 12.7 percent in 1995 to 9,221 or 33.1 percent in 2012 (Stellenbosch University Division for Institutional Research and Planning, 2013).

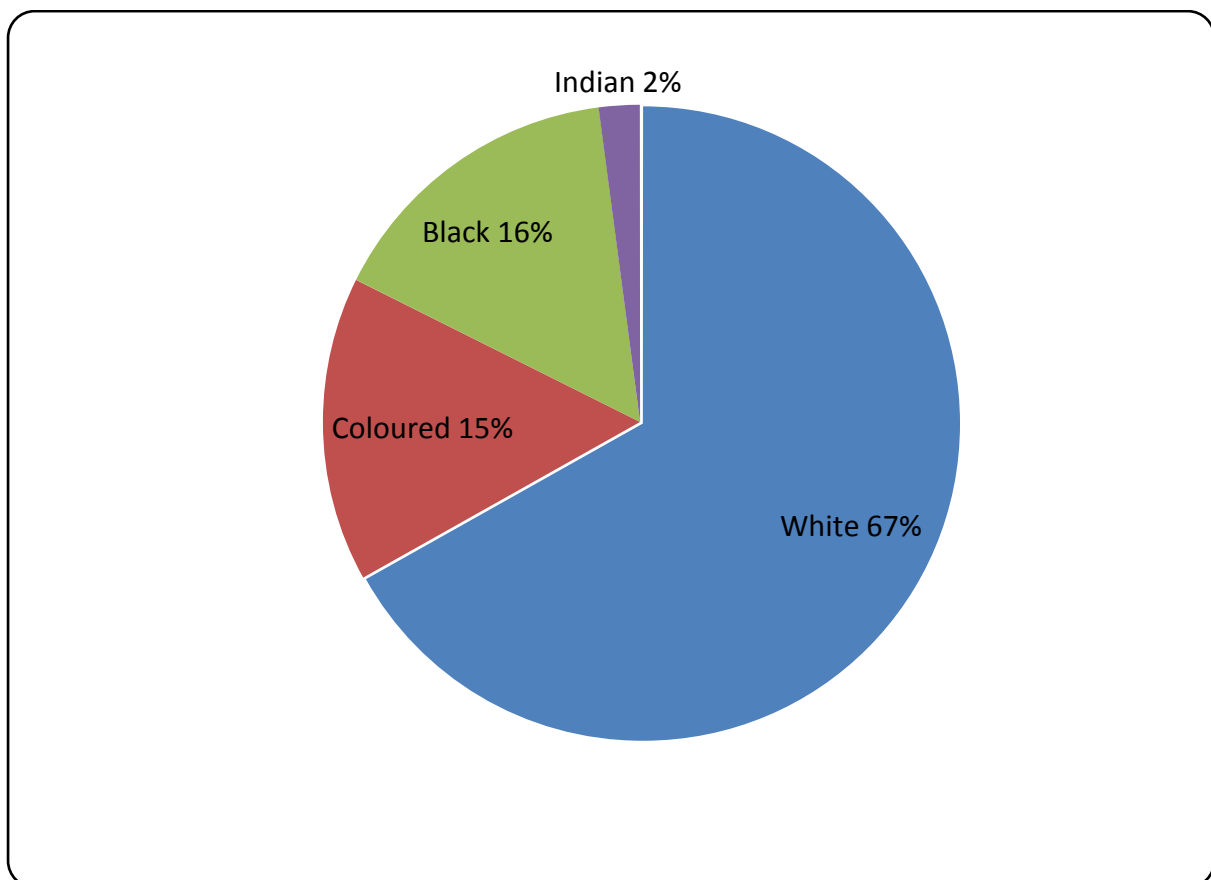


Figure 4.10 Stellenbosch university student demographic profile 2012

Source: (Stellenbosch University Division for Institutional Research and Planning, 2013)

Historical views of the proportion of female versus male undergraduate and graduate students are shown below in figure 4.11 and 4.12 respectively.

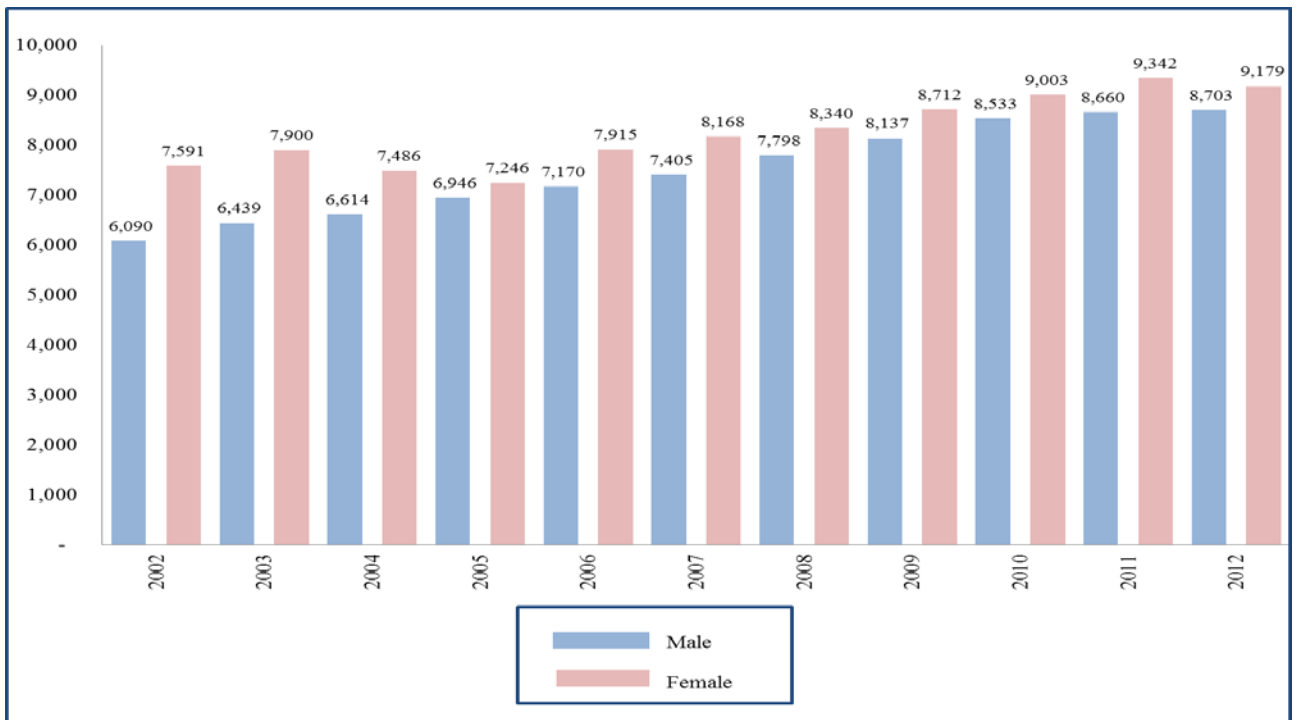


Figure 4.11 Stellenbosch university undergraduate gender profile 2002-2012

Source: (Stellenbosch University Division for Institutional Research and Planning, 2013)



Figure 4.126 Stellenbosch university graduate gender profile 2002-2012

Source: (Stellenbosch University Division for Institutional Research and Planning, 2013)

In 2012, the university fulfilled its academic mission through a permanently employed total staff of 2,958 consisting of 939 academic staff and 2,019 non-academic staff. Stellenbosch University contributed to human capital development by offering academic programs at five campuses namely Stellenbosch, Tygerberg, Bellville Park, Saldanha and Elsenburg (Stellenbosch University Division for Institutional Research and Planning, 2013). It is important to note the campuses outside of Stellenbosch are not considered satellite campuses as there is no duplication in the offering of programs between the campuses. Furthermore, Stellenbosch University fulfilled its academic mission through ten separate faculties namely: Arts and Social Sciences, Science, Education, Agri-Science, Law, Theology, Economic and Management Sciences, Engineering, Health Sciences and Military Science. Table 4.9 below includes enrollment data by faculty for 2012.

Table 4.9 Stellenbosch university enrollment data by faculty 2012

Faculty	Arts & Social Science	Science	Education	Agri-Science	Law	Theology	Economics	Engineering	Health	Military	Overall Count
Certificate	36	0	0	0	0	0	0	0	0	173	209
Degree	3118	1993	813	1259	396	146	4265	2531	1999	203	16723
Total Undergrad	3154	1993	813	1259	396	146	4265	2531	1999	376	21324
Graduate Certificate	158	20	381	0	20	69	601	32	591	0	1872
Graduate Honors	219	180	277	14	216	0	771	0	52	34	1763
Masters	903	339	193	252	130	194	1560	556	832	13	4972
Doctoral	242	258	83	141	42	84	106	161	119	0	1236
Total Post-Graduates	1522	797	934	407	408	347	3038	759	1594	47	9853
Special Students	292	86	11	42	12	8	242	76	268	1	1038
Overall Count	4968	2876	1758	1708	816	501	7545	3366	3861	424	27823

Source: (Stellenbosch University Division for Institutional Research and Planning, 2013)

4.5.1.2. Community Interaction Projects

Stellenbosch University contributes to civic participation and community involvement within local municipalities, the Western Cape Province, South Africa and internationally through multiple community interaction projects. Community interaction projects are identified by

Stellenbosch University according to the following criteria: activity must be linked to an identifiable group in the community, link to identifiable needs of both the university and community and be a sustained activity within a mutually defined partnership (Stellenbosch University Division for Community Interaction, 2013). Coordinated under the SU Office of Community Interaction, there were 177 community interaction projects registered with the university in 2012 from almost every faculty within the university as indicated in figure 4.13 below (Stellenbosch University Division for Community Interaction, 2013).

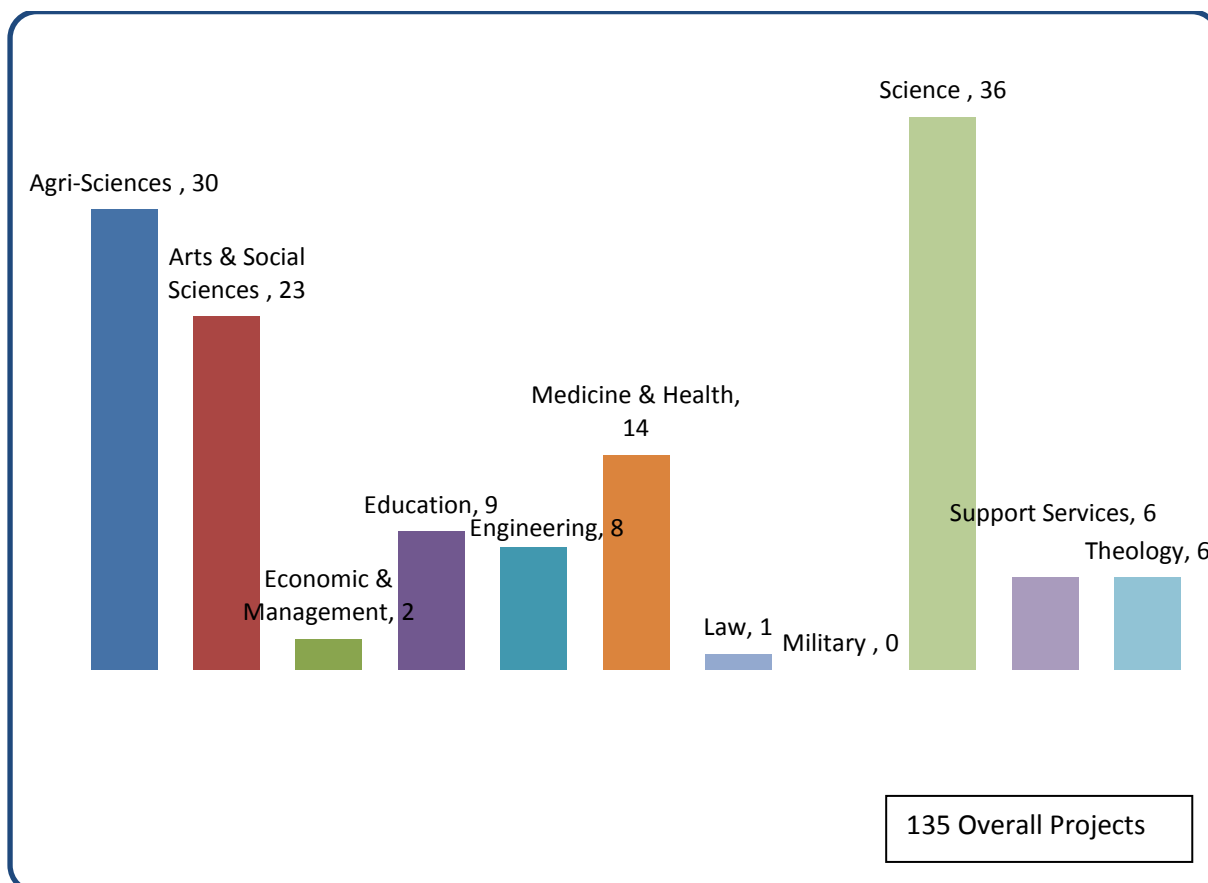


Figure 4.13 Community interaction projects by faculty, 2012

Source: (Stellenbosch University Division for Community Interaction, 2013)

4.5.2. Advancement of Entrepreneurship, Technology Transfer & Innovation

The division of Stellenbosch University responsible for fostering knowledge-based economy through entrepreneurship, technology transfer and innovation is known as Innovus Technology Transfer (Pty) Ltd. As a subsidiary company of Stellenbosch University, Innovus

manages the university's commercialization efforts through licensing, patenting and the development of spin-off companies (Stellenbosch University, 2013b).

In addition, Innovus oversees research agreements pertaining to all intellectual property and commercialization of the university's research efforts (Innovus, 2013). Innovus also runs a LaunchLab business incubator that offers opportunities including several services for entrepreneurs. Finally, the university's short courses and copyright division falls under Innovus along with the management of football at Stellenbosch University (Innovus, 2013).

In 2012, Innovus was comprised of 5 companies including GeoSUN Africa, Stellenbosch Nanofiber Company (Pty) Ltd, Unistel Medical Laboratories (Pty) Ltd, Diaacoustic Medical Devices (Pty) Ltd and African Sun Media. Currently an additional 5 companies are being added under the scope of Innovus. In 2012, Innovus employed 6 full-time staff members, and the group of companies it supports employed 160 people. Additionally, commercialization of the university's research accounted for more a total of 14 companies that reported revenues in excess of R2.11 million.

4.5.2.1. Entrepreneurship

Innovus encourages entrepreneurship at Stellenbosch University in a variety of ways including competitions, offering coaching opportunities and through the establishment of a business accelerator.

One of the most recent ways is through the Stellenbosch Idea Competition (SIC) launched in 2012 (Stellenbosch University, 2013b). Partnering with Nucleus, an organization that promotes entrepreneurship among students, the competition challenged participants to research and present entrepreneurial ideas. Over 69 entries were submitted, and a total of 11 winning ideas were announced, including an internet browser that allows user comments, note-taking tablet devices, a battery monitoring system and a program for teaching green energy in rural communities (Stellenbosch University, 2013b).

Offering coaching and business mentorship opportunities is another way that Innovus promotes entrepreneurship. Through Innovus's Acceleration Hour program, students gain access to a wide range of South African business leaders who share their experiences in the business world (Innovus, 2013). The program includes an online application form and a 30 minute interview with an Innovus business mentor (Innovus, 2013).

The LaunchLab is another recent way that Innovus fulfills its mission of encouraging entrepreneurship. Launched in August 2012 and located the middle of Stellenbosch University's campus, it offers the guidance, network services and infrastructure needed to both spin-out companies and student-owned enterprises. Furthermore, the LaunchLab facilitates networking opportunities, mentoring occasions and affordable office space to enhance entrepreneurship on campus. The LaunchLab facility also includes a 50H internship program aimed at allowing postgraduate students to gain practical experience through financial modeling, market research and other events (Innovus, 2013).

4.5.2.2. Technology Transfer

Technology transfer is accomplished at Innovus through a number of various methods. Some of the methods include sale of intellectual property, licensing to a third party, patents, joint venture agreements and establishing affiliate or associate spin-out companies of Innovus (Innovus, 2013). Through the efforts of Innovus in 2012, patenting activities included 13 patents granted in South Africa, 6 European patents granted and 37 patents from other countries. Additionally in 2012, Innovus received 41 disclosures, created one spinoff company and signed 9 commercial agreements (Stellenbosch University, 2013b). Table 4.10 details the commercial agreements along with a brief description of the technology involved.

Table 4.10 Technology transfer commercial agreements

Company	Technology Description
Southern Mapping	SUDEM (Stellenbosch University Digital Elevation Model) from Prof Adriaan van Niekerk.
Namaqua Wines (Pty) Ltd	A phytoplasma diagnostic test invented by Prof Johan Burger
Westcape Biotech (Pty) Ltd	A grapevine virus complex diagnostic test invented by Prof Johan Burger
CiplaMedpro	A wound dressing containing nano-fibers embedded with antimicrobial peptides developed by Prof Leon Dicks
Danstar	A wine yeast developed by Prof Florian Bauer
GknowMix (Pty) Ltd	A diagnostic pathology supported test developed by Prof Maritha Kotze in collaboration with others.
ISIS Space	The marketing of nanosatellite components developed by Prof Herman Steyn
JVR Psychometrics	Development of two new products including an ethical leadership questionnaire (ELQ) and a Performance Management Audit by Profs Herman Spangenberg and Callie Theron.

Source: (Stellenbosch University, 2013b)

4.5.2.3. Innovation

Innovus enhances innovation processes at Stellenbosch University through licensing assistance, copyright services and other intellectual property applications.

The Innovus Instant Access Licensing Initiative has gained widespread positive publicity and is considered a global leader in the field (Innovus, 2013). The program grants access to cutting edge technologies within Innovus's intellectual property portfolio in order to fast-

track the licensing process. The process in turn offers private sector companies an opportunity to introduce new technology combined with minimal effort and no up-front cost (Stellenbosch University, 2013b).

Copyright services are another way that Innovus contributes to the process of innovation. The services assist Stellenbosch University and African SUN MeDIA Stellenbosch staff with copyright clearance procedures and compliance for course material (Stellenbosch University, 2013b). The copyright services also include support with Stellenbosch University's blanket licensing agreement, organizations that enforce royalty payments and provisions under the Copyright Act of South Africa (Innovus, 2013).

4.5.3. Contributions to the Local Economy

The research results illustrated that students, faculty and staff make an important contribution to the surrounding economies. The contributions come in the form of direct spending from the university, indirect spending and taxes from students, payroll expenditures and taxes paid by faculty and staff and spending on hotels and meals from visitors. The information below includes total outlays from university sources and survey results of spending patterns in the Stellenbosch and Drakenstein municipalities.

4.5.3.1. Economic Impact of the University

Stellenbosch University plays a major role in the surrounding economies through expenditures involving payroll and university-wide purchases. For the purpose of the study, data was obtained from the University's Office of Financial Planning and Asset Management along with information obtained from the university's annual report. According to Stellenbosch University's 2012 annual report, payroll expenditures including remuneration and fringe benefits totaled R1,455,742,000 (Stellenbosch University, 2013b). From survey results detailed later in section 4.5.4.3, faculty and staff respondents indicated 45 percent resided in Stellenbosch and Drakenstein therefore it is estimated that R655,083,900 remained in the local municipalities. In 2012, the university directly employed a total full time permanent staff of 2,958 consisting of 939 academic staff and 2,019 non-academic staff (Stellenbosch University, 2013b). Additionally, the university employed an average of 1,376 non-permanent staff members.

Additionally, the university reported operating expenditures for inventories and services at R1,567,095,000 (Stellenbosch University, 2013b). The university also generated revenue and created jobs through Innovus which commercializes the university's research and technology innovations. In 2012, Innovus reported total revenues of R65,000,000 and employed 160 people through associated companies. Additionally, the total revenue from the subsidiary and associate companies equaled R211,554,000 which included Innovus's 10 companies and 4 companies listed directly under Stellenbosch University. Furthermore, the university contributed R592,000 in deferred taxes on property, books and equipment (Stellenbosch University, 2013b).

4.5.3.2. Economic Impact of Students

An electronic questionnaire was sent on Tuesday, October 22, 2013 to all registered university students with the assistance of the Division for Institutional Research and Planning. In total, the estimated expenditures of Stellenbosch University students in the local economy were based on 477 questionnaire responses received.

For analysis purposes, the responses were stratified based questionnaire responses to gender, student classification, and ethnicity in order to compile a more representative sample of students. The researcher post-stratified the responses to demographic information released by the university detailing student body characteristics according to academic classification, race, and gender statistics. Tables 4.11, 4.12 and 4.13 below detail the study's demographic data of the respondent population versus the 2012 university demographic data for students.

Table 4.8 Comparison of Student Gender Data

Demographic Data	Survey Respondents	Percentage	Overall University	Percentage
Male Students	184	39.2%	13,711	49%
Female Students	285	60.7%	14,112	51%
Overall Total	469	~100%	27,823	100%

Table 4.9 Comparison of Student Classification Data

Demographic Data	Survey Respondents	Percentage	Overall University	Percentage
Undergraduate Students	314	66%	16,932	61%
Graduate Students	157	33%	9,853	35%
Special Students	3	.6%	1,038	3%
Overall Total	474	~100%	27,823	~100%

Table 4.10 Comparison of Student Ethnicity Data

Demographic Data	Survey Respondents	Percentage	Overall University	Percentage
White Students	335	72%	18,602	67%
Coloured Students	36	8%	4,318	15%
Black Students	69	15%	4,324	15%
Indian Students	11	2%	579	2%
Other Students	11	2%	n/a	n/a
Total Overall	462	~100%	27,823	~100%

After post-stratification was completed, the researcher began to analyze the data. The first data set analyzed were responses regarding the students' primary residences. Students were asked to identify their primary residence in terms of the Stellenbosch Municipality, Drakenstein Municipality, Cape Town Municipality, Western Cape (rural) and other. 61 percent of respondents identified living within the Stellenbosch and Drakenstein municipalities which comprised the scope of this study. Additionally, 23 percent of respondents indicated living in Cape Town, 8 percent in other municipal areas and 7 percent

in rural areas of the Western Cape. Figure 4.14 below details the residency responses for students.

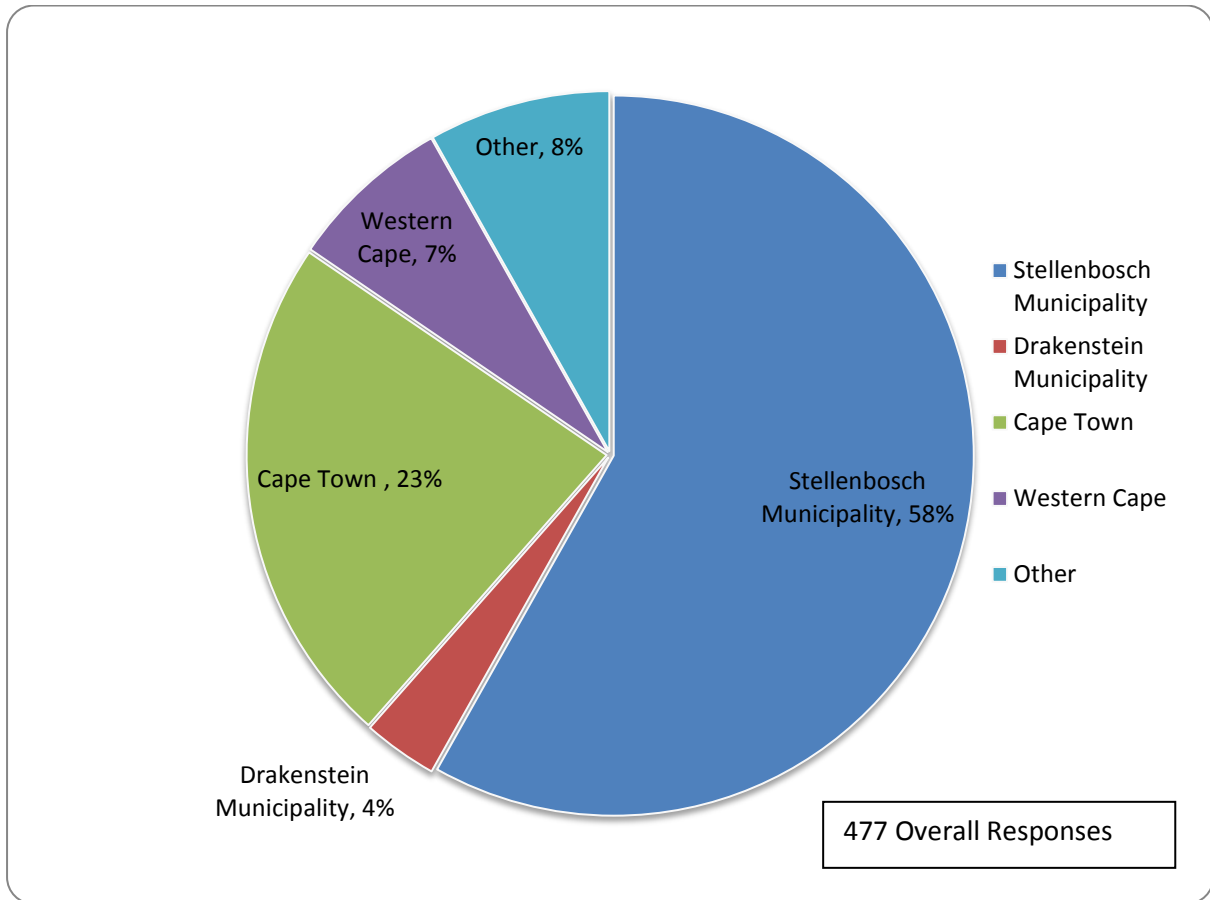


Figure 4.14 Students primary residence by location

Additionally, 49 percent of students reported residing in a rented apartment or house that was not university owned. 30 percent of respondents reported living in university owned property. 13 percent reported living in a parent-owned property and 7 percent reported living in a self-owned property which included a house, apartment or condominium while 1 percent claimed other living arrangements. Figure 4.15 below illustrates the results which will be combined to estimate total property tax paid.

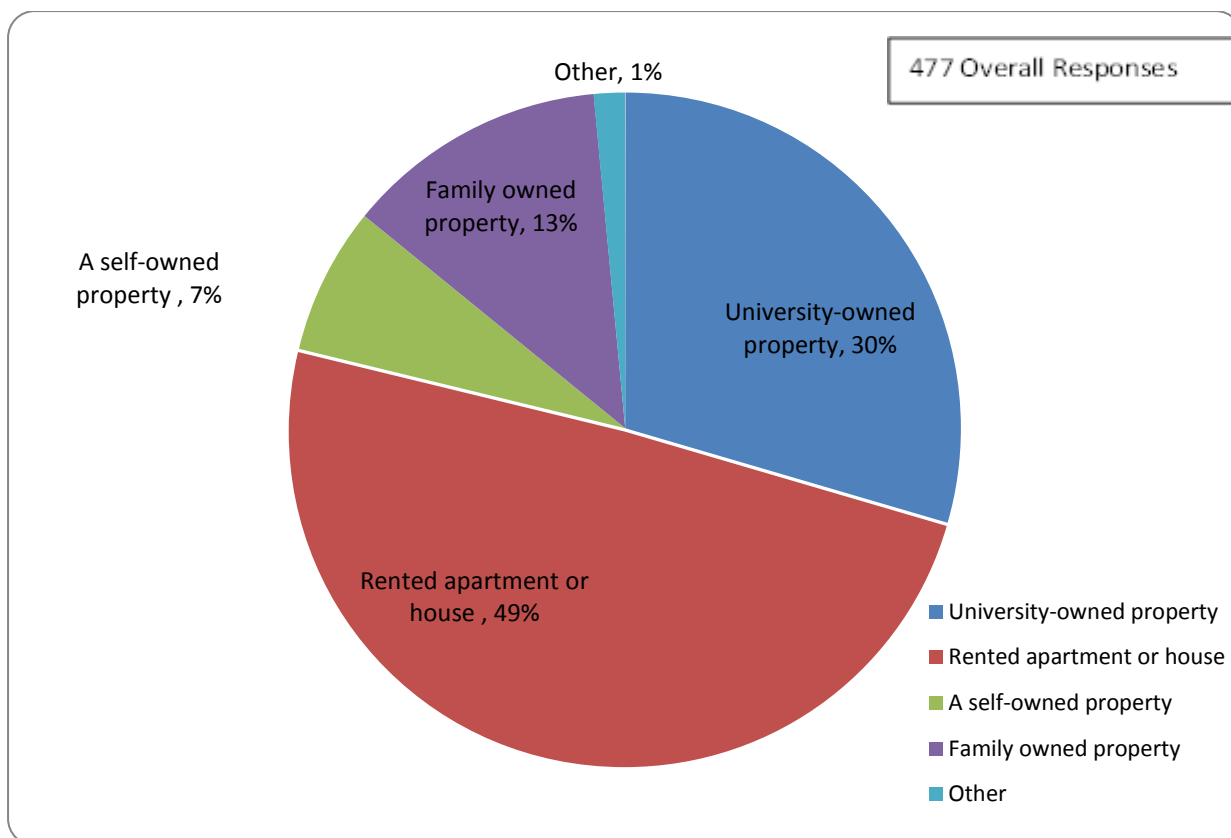


Figure 4.15 Students primary residence by ownership

Based on the results illustrated in figure 4.14 and 4.15, the researcher estimated that 3,227 students live in family owned or self-owned property within the Stellenbosch municipality (27,823 students X .58 Stellenbosch X .20 family or self-owned) and 222 in the Drakenstein municipality (27,823 students X .04 Drakenstein X .20 family or self-owned). According to the latest census data, the Stellenbosch municipality has 43,420 households with an estimated 35.6 percent or 15,457 considered owned or in the process being paid (Statistics South Africa, 2013). Therefore, the 3,227 students that reside in family-owned or self-owned homes represent 7.4 percent of the owner-occupied homes in Stellenbosch. As a result, students and their families paid an estimated R14,175,440, according to the 2011-12 audited property rate revenue for Stellenbosch Municipality (Stellenbosch Municipality, 2013).

Additionally, the Drakenstein municipality has 59,774 households with an estimated 46.3 percent or 27,675 considered owned or in the process being paid (Statistics South Africa, 2013). Therefore, the 222 students that reside in family owned or self-owned homes represent .59 percent of the owner-occupied homes in Drakenstein. As a result, students and their families paid an estimated R984,940 according to the 2011-12 audited property rate revenue

for Drakenstein Municipality (Drakenstein Municipality, 2012). Table 4.14 below details the estimated real estate and personal property taxes paid by students and their families from Stellenbosch University in the Stellenbosch and Drakenstein municipalities.

Table 4.14 Estimated annual property taxes paid by students

Taxing Entity	Estimated Property Taxes Paid	Estimated % of Total Taxes Collected	Estimated Owner Occupied Student Housing	Total % Owner Occupied Housing
Stellenbosch Municipality	R14,175,440	7.4%	3,227	35.6%
Drakenstein Municipality	R984,940	.59%	166	46.3%
Combined Total	R15,160,380	7.99%	3,393	81.9%

Similarly, from questionnaire responses, it is estimated that 54 percent or 15,193 students or their families owned vehicles registered locally through the Stellenbosch and Drakenstein municipalities (27,823 students X 54.6 % respondents owning a car). According to the South African National Traffic Information System, there were 113,163 vehicles registered in Stellenbosch and Drakenstein municipalities as of October 2013 (eNaTIS, 2013). As a result, the 15,193 Stellenbosch University students represented an estimated 13.4 percent of the total vehicles registered. Through 2011-12 audited municipal budget revenue and information provided by municipal staff, it is estimated that of the total R28,047,000 paid in total vehicle registration, licenses and fees, students paid R3,758,298 or 13.4% of the total paid to the municipalities. This information is illustrated in table 4.15.

Table 4.15 Students estimated annual vehicle registration, licenses & fees paid

Taxing Entity	Registration, Licenses and Fees Paid	% of Total Taxes Collected	Estimated Faculty/Staff Owned Vehicles	Total Registered Vehicles
Stellenbosch Municipality	R2,400,476	13.4%	9,724	~72,424
Drakenstein Municipality	R1,357,822	13.4%	5,469	~40,738
Combined Total	R3,758,298	13.4%	15,193	113,163

The median monthly expenditures of student respondents from the questionnaire are listed in Table 4.16 below. The figures represent the median monthly expenditures for rent, school supplies/books, cell phone, groceries, restaurants, entertainment, clothing, laundry, medical, pharmacy, general merchandise, motor vehicles, mass transit, utilities and other expenses in the Stellenbosch and Drakenstein municipalities.

Table 4.16 Median monthly student expenditures in the Stellenbosch and Drakenstein municipalities

Category	Undergraduates	Graduates	Special Students
Rent (Non-University)	R3,000	R3,000	R4,500
Mortgage	R0	R0	R0
School Supplies/Books	R400	R200	R0
Cell Phone	R200	R200	R250
Groceries	R900	R1,500	R1,200
Restaurants & Bars	R300	R500	R600
Entertainment, Recreation and Sports	R200	R300	R200
Clothing	R200	R200	R200

Laundry & Dry Cleaning	R50	R10	R0
Medical & Dental	R200	R100	R500
Pharmacy	R100	R100	R200
General Merchandise*	R50	R100	R300
Motor Vehicles & Fuel	R500	R600	R800
Mass Transit	R185	R300	R0
Other Personal Services**	R180	R200	R300
Electricity	R200	R250	R200
Natural Gas/Heating Oil	R0	R150	R0
Water & Sewer	R300	R300	R0
Garbage Collection	R100	R100	R0
Television & Internet	R145	R260	R300
Landline	R0	R250	R200
Other	R0	R0	R0

*General merchandise expenses included household furnishings, electronics, furniture, appliances, etc. **Other personal services included barber shop visits, beauty shop visits, gym memberships, and so on.

To estimate the overall local spending by all students, the researcher multiplied total number of undergraduate, graduate and special students by the median monthly expenditures and the median number of months spent in the Stellenbosch and Drakenstein region. The median number of months for undergraduates was 9 months while graduate and special students reported a median of 12 months. University-owned housing and meals in residences were excluded as those expenditures were calculated as part of the university expenditures in section 4.5.4.1. As a result of the questionnaire data, it is estimated that undergraduate, graduate and special students spent R1,365,945,255 in the Stellenbosch and Drakenstein

municipal areas. Table 4.17 below details the estimated student spending within the research scope areas of the Stellenbosch and Drakenstein municipalities.

Table 4.17 Estimated student spending in Stellenbosch and Drakenstein municipalities

Category	Undergraduates	Graduates	Special Students
Rent (Non-University)	R278,807,040	R216,371,880	R34,191,720
Mortgage	R0	R0	R0
School Supplies/Books	R37,182,672	R14,424,792	R0
Cell Phone	R18,591,336	R14,424,792	R1,899,540
Groceries	R83,661,012	R108,185,940	R9,117,792
Restaurants & Bars	R27,887,004	R36,061,980	R4,558,896
Entertainment, Recreation and Sports	R18,591,336	R21,637,188	R1,519,632
Clothing	R18,591,336	R14,424,792	R1,519,632
Laundry & Dry Cleaning	R4,647,834	R721,239	R0
Medical & Dental	R18,591,336	R7,212,396	R3,799,080
Pharmacy	R9,295,668	R7,212,396	R1,519,632
General Merchandise*	R4,647,834	R7,212,396	R2,279,448
Motor Vehicles & Fuel	R46,478,340	R43,274,376	R6,078,528
Mass Transit	R17,196,985	R21,637,188	R0
Other Personal Services**	R16,732,202	R14,424,792	R2,279,448
Electricity	R18,591,336	R18,030,990	R1,519,632
Natural Gas/Heating Oil	R0	R10,818,594	R0
Water & Sewer	R27,887,004	R21,637,188	R0
Garbage Collection	R9,295,668	R7,212,396	R0
Television & Internet	R13,478,718	R18,752,229	R2,279,448
Landline	R0	R18,030,990	R1,519,632

Other	R0	R0	R0
Monthly Overall	R670,154,661	R621,708,534	R74,082,060

4.5.3.3. Economic Impact of Faculty & Staff

Another electronic questionnaire was sent on Tuesday, October 22, 2013 to all faculty and staff with the assistance of the Division for Institutional Research and Planning. In total, the estimated expenditures of Stellenbosch University faculty and staff in the local economy were based on 245 questionnaire responses received.

For analysis purposes, the responses were stratified based questionnaire responses to gender, employment classification, and ethnicity in order to compile a more representative sample of faculty and staff members. The responses were post-stratified to demographic information released by the university detailing personnel with permanent appointments according to personnel category, race, and gender statistics. Tables 4.18, 4.19 and 4.20 below detail the study's demographic data of the respondent population versus the 2012 university demographic data for faculty and staff.

Table 4.11 Comparison of Faculty & Staff Gender Data

Demographic Data	Survey Respondents	Percentage	Overall University	Percentage
Male Faculty & Staff	98	40.5%	1363	46%
Female Faculty & Staff	144	59.5%	1595	54%
Overall Total	242	100%	2958	100%

Table 4.12 Comparison of Faculty & Staff Classification Data

Demographic Data	Survey Respondents	Percentage	Overall University	Percentage
Academic Personnel	70	29%	939	31%
Non-Academic Personnel	166	68%	2019	68%
Other Personnel	7	3%	n/a	n/a
Overall Total	243	100%	2958	~100%

Table 4.13 Comparison of Faculty & Staff Ethnicity Data

Demographic Data	Survey Respondents	Percentage	Overall University	Percentage
White Faculty & Staff	143	62%	1746	59%
Coloured Faculty & Staff	69	30%	1031	34%
Black Faculty & Staff	15	6%	152	5%
Indian Faculty & Staff	1	.4%	29	.98%
Other Faculty & Staff	3	1%	n/a	n/a
Overall Total	231	~100%	2958	~100%

After post-stratification was completed, the data was analyzed. The first data set analyzed were responses regarding the primary residences of faculty and staff. Faculty and staff were asked to identify their primary residence in terms of the Stellenbosch Municipality, Drakenstein Municipality, Cape Town Municipality, Western Cape (rural) and other. 45 percent of respondents identified living within the Stellenbosch and Drakenstein municipalities which comprised the scope of this study. Additionally, 35 percent of respondents indicated living in Cape Town, 15 percent in other municipal areas and 5 percent in rural areas of the Western Cape. Figure 4.16 below details the residency responses for faculty and staff.

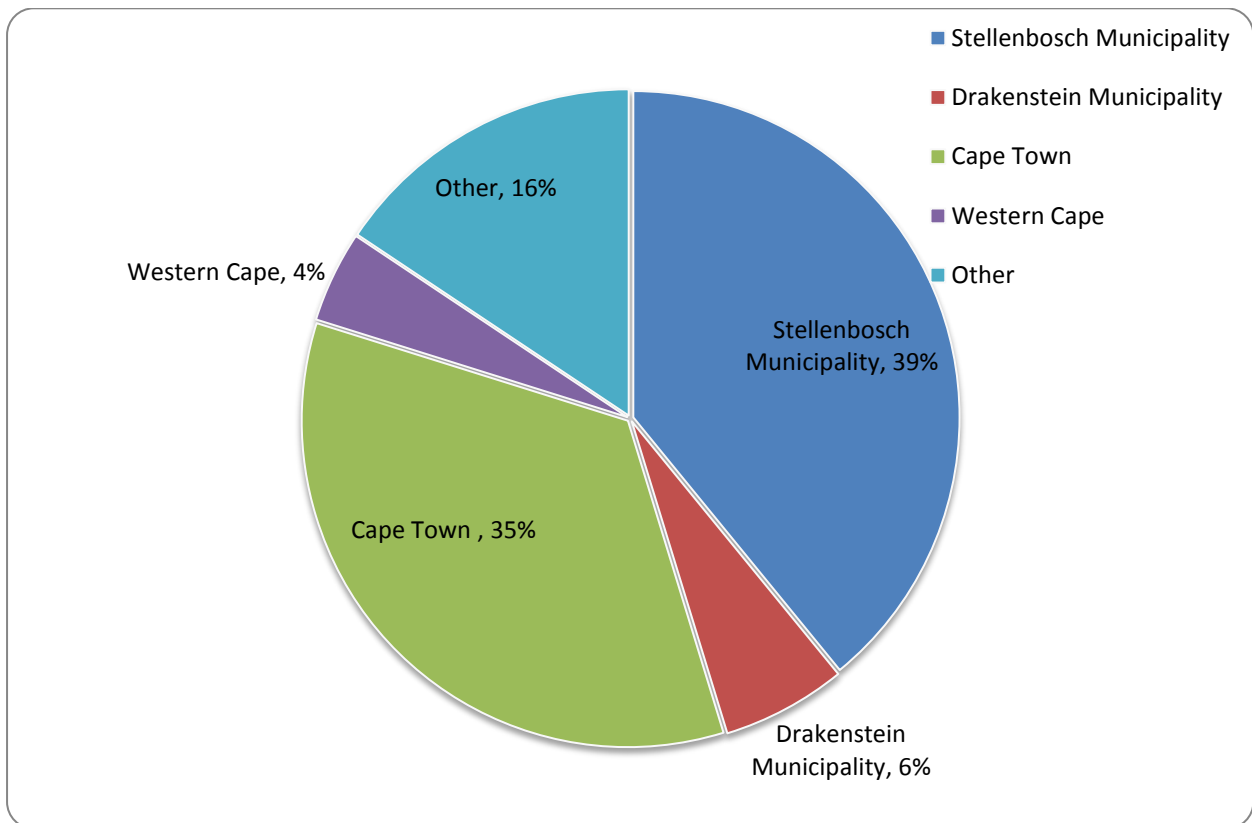


Figure 4.16 Faculty and staff primary residence by location

Additionally, 67 percent of faculty and staff reported residing in a self-owned property which included a house, apartment or condominium. 28 percent of respondents indicated a rented house or apartment and 4 percent claimed university housing or other. Figure 4.17 illustrates the results which will be combined to estimate total property tax paid.

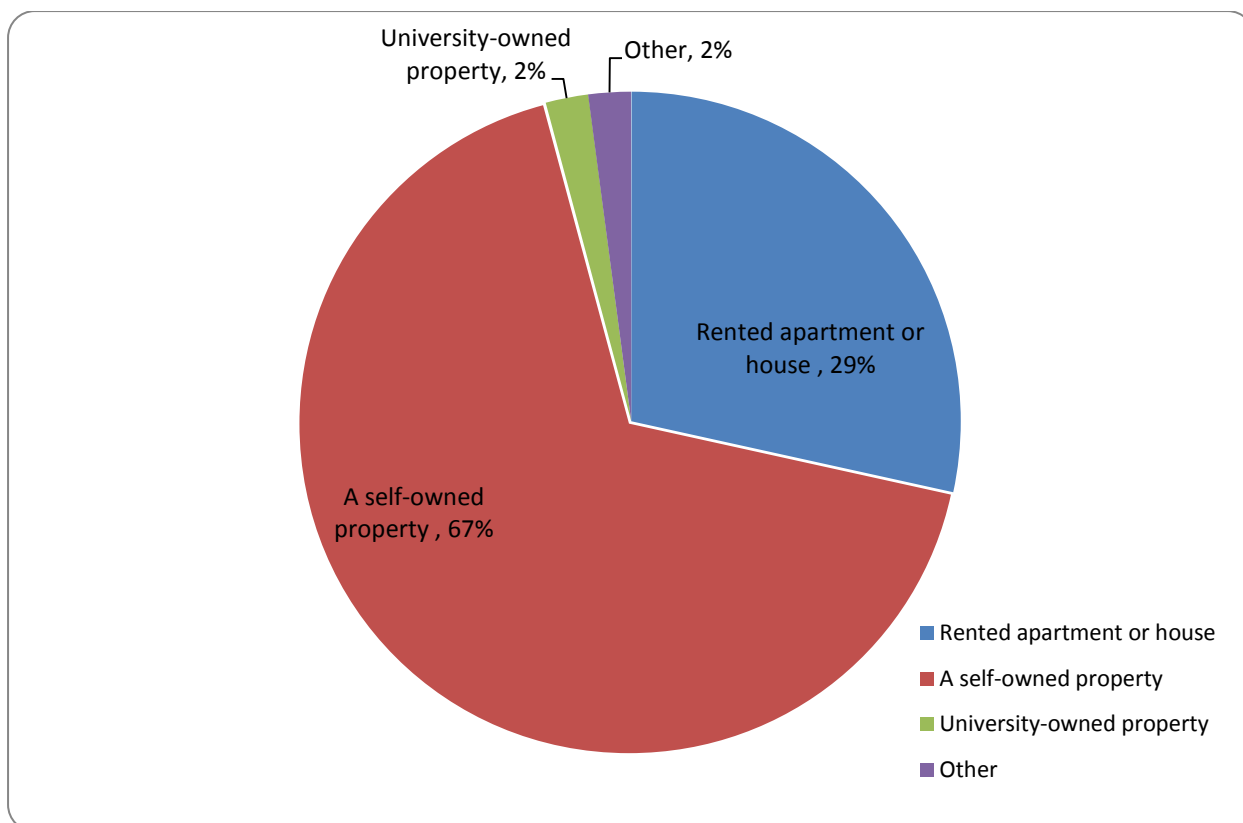


Figure 4.17 Faculty and staff primary residence by ownership

Based on the data results illustrated in figure 4.16 and 4.17, the researcher estimated that 772 faculty and staff live in self-owned property within the Stellenbosch municipality (2,958 faculty X .39 Stellenbosch X .67 self-owned) and 118 in the Drakenstein municipality (2,958 faculty X .06 Drakenstein X .67 self-owned). According to the latest census data, the Stellenbosch municipality has 43,420 households with an estimated 35.6 percent or 15,457 considered owned or in the process being paid (Statistics South Africa, 2013). Therefore, the 772 faculty and staff that own homes represent 4.9 percent of the owner-occupied homes in Stellenbosch. As a result, the faculty and staff paid an estimated R9,407,657 according to the 2011-12 audited property rate income for Stellenbosch Municipality (Stellenbosch Municipality, 2013).

Additionally, the Drakenstein municipality has 59,774 households with an estimated 46.3 percent or 27,675 considered owned or in the process being paid (Statistics South Africa, 2013). Therefore, the 118 faculty and staff that own homes represent .4 percent of the owner-occupied homes in Drakenstein. As a result, the 117 faculty and staff paid an estimated R667,756 according to the 2011-12 audited property rate income for Drakenstein Municipality (Drakenstein Municipality, 2012). Table 4.21 details the estimated real estate

and personal property taxes paid by faculty and staff from Stellenbosch University in the Stellenbosch and Drakenstein municipalities.

Table 4.21 Estimated annual property taxes paid by faculty & staff

Taxing Entity	Property Taxes Paid	% of Total Taxes Collected	Estimated Owner Occupied Faculty/Staff Housing	Total % Owner Occupied Housing
Stellenbosch Municipality	R9,407,657	4.9%	772	35.6%
Drakenstein Municipality	R667,756	.4%	118	46.3%
Combined Total	R9,474,413	5.3%	890	81.9%

Likewise, from questionnaire responses it is estimated that 49 percent or 1,449 faculty and staff owned vehicles registered locally through the Stellenbosch and Drakenstein municipalities. According to the South African National Traffic Information System, there were 113,163 vehicles registered in Stellenbosch and Drakenstein municipalities as of October 2013 (eNaTIS, 2013). As a result, Stellenbosch faculty and staff represented an estimated 1.2 percent of the total vehicles registered. Through 2011-12 audited municipal budget revenue and information provided by municipal staff, it is estimated that faculty and staff paid R336,564 for vehicle registration, licenses and fees to the municipalities. This information is illustrated in Table 4.22 below.

Table 4.22 Faculty & staff estimated annual vehicle registration, licenses & fees paid

Taxing Entity	Registration, Licenses and Fees Paid	% of Total Taxes Collected	Estimated Faculty/Staff Owned Vehicles	Total Registered Vehicles
Stellenbosch Municipality	R214,968	1.2%	928	~72,424
Drakenstein Municipality	R121,596	1.2%	521	~40,738
Combined Total	R336,564	1.2%	1,449	113,163

Monthly expenditures and estimated annual expenditures of faculty and staff respondents from the questionnaire are listed in Table 4.23 below. The figures represent the median monthly expenditures for electricity, natural gas, water, sewer, garbage collection, television, internet, phone service, school fees and other costs in the Stellenbosch and Drakenstein municipalities. For the school fees, 17 percent of survey respondents indicated that paying for private school fees and public school fees were included by some respondents as well. However, it is important to note this total may have been higher if public school fees were factored in as a separate question. For other costs, respondents indicated a range of items that included transportation, parking, petrol, and other services not included in questionnaire. Furthermore, annual expenditures were calculated on a 12 month basis and included on the percentage of respondents indicating a residence in the Stellenbosch or Drakenstein municipalities.

Table 4.23 Faculty & staff estimated expenditures in the Stellenbosch and Drakenstein municipalities

Category	Median Monthly Expenditures	Annual Expenditures
Electric	R600	R9,583,920
Natural Gas/Heating Oil	R150	R2,395,980
Water & Sewer	R300	R4,791,960
Garbage Collection	R110	R1,757,052
Television & Internet	R500	R7,986,600
Landline & Cell Phone	R500	R7,986,600
School Fees	R1,117	R3,033,150
Other: Transportation, Parking, etc.	R875	R13,976,550
Overall Expenditures	R4152	R51,511,812

Using both university payroll data and estimated monthly expenditures would have resulted in a duplicate approximation of the faculty and staff economic impact. As a result, the researcher decided to use faculty and staff payroll data obtained from the university as outlined in section 4.5.4.1. to determine the local economic impact in the Stellenbosch and Drakenstein municipalities. Therefore, the data displayed in table 4.23 is for descriptive purposes only and was not used in the overall calculation of economic impact.

4.5.3.4. Economic Impact of Visitors

The student, faculty and staff questionnaires also included information related to visitor spending in the local economy. The surveys requested information regarding the respondent's number of visitors, how many days the visitor stayed and how many hotel nights were used. The researcher used the per diem rate set by the South African Revenue Service (SARS) to estimate visitor spending in the local region. The per diem rate was R319 for meals and incidentals. In the absence of average daily rate studies for the local region, the researcher used the Stellenbosch University domestic subsistence rate for hotels of R1,400. It is

important to note, the university's domestic subsistence rate also matched exactly with the SARS per diem rate for meals and incidentals.

To estimate the total visitor impact, the percentage of questionnaire respondent data was multiplied by the total students, faculty and staff of Stellenbosch University. For hotels, this figure was multiplied by the average number of hotel stays indicated by respondents to estimate the total number of overnight stays. Additionally, the figure was adjusted by the percentage of survey respondents indicating residency within the Drakenstein and Stellenbosch municipalities. Based on the questionnaire data, the researcher estimated visitor spending from faculty and staff totaling R21,570,870 which included friends, family and professional visitors such as conference attendees. Visitor spending from students was estimated at R157,101,670 and included mostly friends and family. Table 4.24 provides a summary of the questionnaire results.

Table 4.24 Students, faculty & staff estimated annual visitor spending in the Stellenbosch and Drakenstein municipalities

Category	Faculty & Staff	Students
Percentage of Survey Respondent Visitors	67%	69%
Respondent Visitors Reported	5,008	8,742
Average Visitors per Respondent	20.9	18.8
Average Visitor Nights	3.09	1.85
Percentage of Survey Respondent Hotels	15%	21%
Average Hotel Nights	11.44	3.97
Meals & Misc. Spending	R18,373,036	R136,318,023
Hotel Spending	R3,197,834	R20,783,647
Overall Spending	R21,570,870	R157,101,670

4.6 Conclusion

In conclusion, the outcomes of the university and community interaction agreements analysis along with Stellenbosch University's social and economic impact were discussed in this chapter. Through the community interaction agreement analysis in phase 1, the perceptions from community leaders and municipal and university administrators regarding the agreements were documented. The section included an overview of participants, questionnaires, artifact analysis, questionnaire analysis and concluded with an interpretational analysis. The social impact analysis in phase 2 documented the community interaction projects from multiple sources. This section also included an outline of participants, questionnaires, database and source documents, a theme analysis, a numerical analysis and finally, an interpretational analysis. The economic impact analysis in phase 3, therefore, chronicled the university's impact from multiple sources as well. This section included participants, development of human capital, advancement of entrepreneurship, technology transfer and innovation and contributions to the local economy. In the next chapter, a discussion on the findings within the methodological framework is presented and related back to the literature review.

Chapter 5 Discussion of the Findings

5.1. Introduction

The aim of the research was to understand the relationship between Stellenbosch University and local development by measuring the impact of the university's community interaction agreements. Drawing on a review of the existing literature and the pragmatic worldview observations of previous studies, a mixed methods research design was chosen to assess the impact of Stellenbosch University on regional and local development. The study incorporated an integrated methodologies style or FraIM developed by Plowright (2011) that complimented a mixed method design approach.

The combination of methods along with the FraIM allowed the potential for a design aimed back to the research questions. Additionally, the use of multiple data collections methods including questionnaires allowed the researcher to triangulate responses from various sources.

This chapter will give a brief summary of the study. The study results will be conferred including those that agreed with the researcher's expectations and those that differed. Furthermore, reasons for why particular results may have occurred will be noted and whether the results are in agreement with similarly reported studies. Finally, the implications and significance of the study will be discussed.

5.2. Study Overview

As previously discussed in section 3.2, the main research question was stated as:

What is the impact of Stellenbosch University community interaction agreements with the Stellenbosch and Drakenstein municipalities on local development?

As a result, the central research question led to the following subsidiary research questions:

- I. What are the perceptions of the social and economic impact of the community interaction agreements by municipal and university administrators?
- II. What are the social impacts of the community interaction agreements by project leaders that are actively involved in community interaction programs?
- III. What is the economic impact of the Stellenbosch University interaction agreements in the Stellenbosch and Drakenstein municipalities?

The aim or purpose of this research was to understand the relationship between Stellenbosch University and local development through the analysis of the university's community interaction agreements. As a result of the research questions and purpose of the research, the following research objectives were formulated:

- I. Investigate the impact of the local university interaction agreements in Stellenbosch and Drakenstein through perceptions of municipal and university administrators.
- II. Examine the university interaction agreements through the university's community interaction database of projects and through the project leaders actively involved in university interaction programs.
- III. Measure the identified university interaction agreements with an economic impact study in the geographic areas of the Stellenbosch and Drakenstein municipalities.

In an effort to respond to the above research questions, the purpose of the research, and the research objectives, a systematic approach was employed. Furthermore, an integrated conceptual framework was developed for socio-economic impact studies of higher education institutions. The first phase within the study included questionnaires and a theme analysis of the community interaction agreements to assess the impact of the university. The participants for the first phase included university administrators, municipal administrators and community leaders. The next phase used a structured questionnaire with community interaction project leaders to determine the social impact. The final phase sought to measure the economic impact of the community interaction agreements by conducting an economic impact study involving students, faculty and staff of the university.

5.3. Main Findings

In the following sections, the main findings that emerged from the data analysis of the community interaction agreements, social impact and economic impact are discussed.

5.3.1. Phase 1: Community Interaction Agreements

To fulfill the aim of this study, it was necessary to first explore higher education policy analysis before evaluating the community interaction agreements. According to the literature review, the theoretical approach for this study was grounded in evaluative policy analysis with an overall aim to closely examine the policy objectives and purpose (Van der Knaap, 2004). Additionally, because higher education is a unique interdisciplinary field of study, it poses challenges regarding methods and evaluative criteria (Hay & Monnapula-Mapesela, 2009).

As a result, the study incorporated an integrated methodologies approach or FraIM developed by Plowright that compliments a mixed method design (Plowright, 2011). Furthermore, the three most common evaluative criteria of policy objectives including effectiveness, efficiency, and equity were used in the study (Kraft, 2010). Using the FraIM approach, the study combined the phase one questionnaire responses and theme analysis of the community interaction agreements to form a higher level interpretational analysis. From the interpretational analysis, three major patterns emerged from Stellenbosch University's community interaction agreements with the municipalities of Stellenbosch and Drakenstein.

The first pattern identified was the importance of long-term collaboration within the agreements. The liberal use of the concept of sustainability, formalizing regular leadership meetings, the formation of joint projects and integration of projects into the Integrated Development Plans (IDPs) along with other structural components signaled multi-year commitments. This was an important pattern because it aligned with the Education White Paper 3: *A Programme for the Transformation of Higher Education* which stated that higher education institutions should play an important role in the cultural, social, and economic growth of South African society (CHE, 2004). Additionally, the pattern directly met one of the Education White Paper 3's broad national goals of encouraging regional cooperation (Hay & Monnapula-Mapesela, 2009).

The second pattern noted was the importance of a reciprocal relationship between the university and the municipality. Through a theme analysis, it was noted that the agreements emphasized both the university and community as beneficiaries as well as mutual benefit in joint projects. Questionnaire respondents confirmed the mutual benefit with 86 percent agreeing or strongly agreeing that the community interaction project, program or initiative they were involved had a mutual benefit and sense of reciprocity between the university and the community. From the literature review, it was evident that a reciprocal relationship was important because it illustrated progress towards the Higher Education Amendment Act of 2008. Specifically, it supported the subsequent South African Higher Education Qualifications Framework which has sought to alter higher education institutions from the apartheid era exclusive knowledge production model, to a new model focusing on teaching, learning, research, and community engagement (Barnett, 2012). Furthermore, Weerts and Sandmann (2010) point out that community engagement should be considered a two-way approach that emphasizes collaboration between higher education institutions and the community to address societal needs.

However, the third pattern identified raises reciprocity concerns by way of the emphasis on community need as the primary condition behind the agreements. Through a theme analysis, it was discovered that both texts highlight overwhelmingly the problems and issues within the community before addressing the commitment between the university and municipality. For instance, the municipalities are described as having grave socio-economic problems and historically divided with infrastructure, ecology and wealth disparities. While these conditions may certainly exist, the language used suggests a paternalistic role of the university working to fix the municipalities' problems. The recent South African National Development Plan 2030 states that universities are recognized as vital to the development of the nation (National Planning Commission, 2012). However, as described by the South African Council on Education, when actively engaging with surrounding communities higher education institutions must assume less of a paternalistic character and more of a reciprocal relationship with the community (CHE, 2004). As a result, the emphasis on the community's need directs the agreements away from the reciprocal relationship outlined in pattern two. The university could have emphasized a variety of its needs as well including the importance of integrated research projects, practical learning opportunities, community interaction projects, and service-based learning within the community.

5.3.2. Phase 2: Social Impact

The social impact analysis began with a literature review on higher education and community engagement. The review began with Ernest Boyer's landmark special report titled *Scholarship Reconsidered: Priorities of the Professoriate*, which introduced the concept of the scholarship of community engagement by urging higher education institutions and academics to embrace their societal responsibilities (Boyer, 1991). Next, the review noted a delineation of community engagement defined by Driscoll as "the collaboration between higher education institutions and their larger communities (local, regional, state, national, global) for the mutually beneficial exchange of knowledge and resources in a context of partnership and reciprocity" and the various conceptual issues surrounding the term (Driscoll, 2009). Additionally, typologies of community engagement were explored along with the South African community engagement experience and a critical analysis of community engagement. The social impact phase used an integrated methodologies approach or FraIM developed by Plowright (Plowright, 2011). Using the FraIM approach, the study employed a questionnaire to survey 77 community interaction project leaders to determine the university's social impact. Additionally, this phase incorporated a highly structured analysis of various community interaction artifacts including the university's community interaction database, the community interaction division's annual report, books and the university's website.

The first major pattern to emerge regarding social impact was that the community interaction projects were primarily designed and conducted for the community's benefit. Within the narrative questionnaire analysis, respondents discussed skills development, creating awareness and supporting individuals in local economy in terms of community benefit. The questionnaire results also suggested a similar trend with an overwhelming 94 percent of respondents agreeing or strongly agreeing that the community interaction project, program or initiative they were involved primarily benefited the community. From the literature review, this is important because it relates to the conceptual issue surrounding the definition of community engagement and the emphasis of reciprocity between the higher education institution and the community. As noted by Albertyn and Daniels, universities typically dominate the research agenda, and impacts are often measured with a university bias (Albertyn & Daniels, 2009). Furthermore, according to Driscoll most of the seventy six institutions within the Carnegie classification system could only describe in ambiguous terms

how that reciprocity was achieved (Driscoll, 2009). It is, therefore, important that community interaction at Stellenbosch University and elsewhere include systems to maintain reciprocity such as community participant feedback surveys, development of community initiated projects and articulation of university benefit as well.

From the literature review, it is also clear through the recent South African National Development Plan 2030 and King III Report that universities will need to develop metrics to account for their broad range of impacts. The study results illustrated several characteristics of the 177 community interaction projects that could be used in future social impact metrics. The first important result from the community interaction database confirmed that 41 percent of the community interaction projects were located within the local municipalities of Stellenbosch and Drakenstein. Additionally, questionnaire respondents also reported 75 percent of projects were located within townships defined as racially segregated and socio-economically disadvantaged communities such as Kayamandi, Mbekweni, etc. This is especially important given the Education White Paper 3 stated transformation goals for higher education and the role institutions should play regarding the cultural, social, and economic growth of South African society (CHE, 2004). Furthermore, the findings compliment Singh's assertion for educational values in post-apartheid South Africa to move beyond human capital theory into creating cultural capital for different groups (Singh, 2005). The final social impact metric was the total reported non-university paid or volunteer market wages, materials, and transportation costs for community interaction projects in 2012 at a cost of R17,847,150. This social impact metric is important for two reasons. First, it quantifies otherwise non-captured costs from an overall university socio-economic impact perspective. Second and more importantly for faculty and staff, it relates to Boyer's call for a more holistic view of scholarship and the establishment of a reward system for faculty participating in community engagement (Boyer, 1991).

The second major pattern was that the university's community interaction projects have a measurable social or economic impact on the community. The explanations again differed from the narrative and numerical analysis; however the measurable impact was shown through questionnaire responses, the community interaction database, and university documents. A combined 76 percent of respondents strongly agreed or agreed that the community interaction project, program or initiative they were involved in has a measurable community or economic impact. This is important because the scholarship of community

engagement can help to develop the public features of academic scholarship (Albertyn & Daniels, 2009). Furthermore, Brenner and Manice also point out that community engagement can contribute to the quality of study designs, methodologies and dissemination of results (Brenner & Manice, 2011).

Similar to pattern one, the measurable results helped to compliment the recent call from the South African National Development Plan 2030 and King III Report that universities need to develop metrics to account for their broad range of impacts. For the community interaction project leaders surveyed, a total of 50,089 participants were listed as the actual primary target group and a total of 21,237 secondary target participants were recorded in 2012. Furthermore, questionnaire respondents pointed to measurable impacts through practical training, professional development and research data. This is important because increased student motivation and the development of interpersonal skills are the most frequently cited cognitive benefits of community engagement (Brenner & Manice, 2011). Furthermore, increased community engagement activities can also reduce historical mistrust among researchers and communities being studied as well (Brenner & Manice, 2011).

The overall results confirm that Stellenbosch University has a major social impact on the surrounding communities of Stellenbosch and Drakenstein. Of the total 177 community interaction projects, 71 projects occurred in the local study area of Stellenbosch and Drakenstein. A total of 3,066 undergraduates, graduates and staff participated in community interaction projects in 2012. Furthermore, in the local study area project leaders estimated the primary target participants 1,131,962 and the secondary target group participants 766, 968. Additionally, research results showed that the faculties of Agricultural Sciences, Arts & Sciences and Sciences accounted for 117 community interaction projects or 66 percent of the total. In addition, 70 percent of community interaction projects including those located in the local study area involved training, advice or direct service. There were various types of community interaction projects including (55) volunteerism and community service, (42) integration of teaching, learning and community interaction, (41) integration of research and community interaction and (39) integration of teaching, learning, research and community interaction. Approximately 76 percent of the projects primarily targeted community adults or children. The remaining target groups included industry consisting of 14 percent, university students at 6 percent and researchers at 4 percent. Furthermore, 41 percent of the community interaction projects indicated education as the primary community sector involved followed

by 19 percent in agriculture and 13 percent in health. Moreover, 71 percent of the community interaction projects noted empowerment as the primary community impact. Approximately 75 or 42 percent community interaction projects focused on schools or included school components. The Hope@Maties school project reached 64 schools, 222 learners and a total of 50 teachers with 104 of the participants registering as students of the university, of which 81 received recruitment bursaries. Finally, 32 of the community interaction projects included student service learning projects.

5.3.3. Phase 3: Economic Impact

The economic impact analysis began with a literature review on higher education and economic development along with a review of higher education economic impact studies. In this phase, the researcher identified R4.80 billion worth of economic impacts from Stellenbosch University on the surrounding communities and beyond. In relation to the literature review, this quantified economic impact is important because the relationship between higher education institutions and economic development is a highly under-researched area (Pilay, 2010). The economic impact was calculated by taking into consideration a number of variables that occur throughout the operation of a large research university. The variables included direct impacts such as university expenditures and payroll data as well as indirect impacts such as research revenue from university owned companies, local expenditures and taxes paid by students, visitors, faculty and staff. Furthermore, the approach aligned with the traditional method outlined in other university economic impact studies based on institutional exports such as direct expenditures, payroll and other operations of the university then using a range of multipliers to extrapolate the impact throughout the local economy (Blackwell et al., 2002).

Direct expenditures from Stellenbosch University totaled R3.02 billion and generated an overall R4.80 billion of economic activity implying an annual output multiplier of 1.58. Furthermore from the literature review, these results confirm the growing consensus that few public investments have a higher economic return than investments made in higher education (Duderstadt, 2000). Additionally, according to data supplied by the Stellenbosch University Financial Services Division, of the total R1.16 billion in expenditures to suppliers, an estimated R306 million or 26.6 percent of operating expenditures remained in the local economies of Stellenbosch and Drakenstein (SU Financial Services Division, 2013). This

finding helps to quantify the university's contribution towards local economic development which has historically not been strategically focused on by universities (Pilay, 2010). Furthermore, Stellenbosch University is the major employer in the region with an annual payroll of R1.45 billion and an estimated R655 million in payroll expenditures directly impacting the Stellenbosch and Drakenstein municipalities (Stellenbosch University, 2013b). In 2012, the university directly employed a total full time permanent staff of 2,958 consisting of 939 academic staff and 2,019 non-academic staff (Stellenbosch University, 2013b). Additionally, the university employed an average of 1,376 non-permanent staff members (Stellenbosch University, 2013b). Questionnaire results indicated an estimated 1,950 permanent and non-permanent staff members reside within the study's scope of the Stellenbosch and Drakenstein municipalities. This is important because the university's staffing levels directly relate to the university's ability to contribute to human capital development and the advancement to a knowledge-based economy. From the literature review, it was noted that societies continue to transition into knowledge-based economies where intellectual capital is replacing physical and financial capital as the primary avenue to prosperity, strength and well-being (Duderstadt, 2000). Additionally, the university had a deferred tax balance of R592,000 for property, books and equipment (Stellenbosch University, 2013b). Although this is a small amount, this information illustrates Stellenbosch University's tax contribution to other government institutions. Furthermore, Stellenbosch University received R1.29 billion in revenues from government grants and was able to leverage this funding at a rate of 372 percent (Stellenbosch University, 2013b). This is important because it directly relates to the work that Psacharopoulos and Patrinos have done regarding historical rates of return for public investment in higher education (Psacharopoulos & Patrinos, 2004).

Indirect impacts of Stellenbosch University included the estimated expenditures of students, faculty, staff and visitors to the campus. Students at Stellenbosch University contributed an estimated R1.38 billion to the regional economies of Stellenbosch and Drakenstein which included local expenditures and taxes paid. In addition, to the university payroll figures noted above, faculty and staff contributed an estimated R10.4 million in local property taxes and vehicle fees. Furthermore, Stellenbosch University visitors spent an estimated R178 million locally during their trips to the university. The indirect impacts from students, faculty, staff and visitors employed the bill-of-goods approach outlined by Ambargis in the literature

review. This was important because the approach required the gathering of local data and the inclusion of specific categories for budgeted expenditures (Ambargis et al., 2011). Furthermore, using a bill-of-goods approach is especially important for the accuracy of studies examining local university impacts because it helps to determine how much spending actually remains in the local economy (Ambargis et al., 2011).

Furthermore, commercialization of the university's research accounted for a total of 14 companies that reported revenues in excess of R2.11 million and employed 160 people (Innovus, 2013). In addition to these fiscal impacts, patenting activities at Innovus included 13 patents granted in South Africa, 6 European patents granted and 37 patents from other countries. Additionally, Innovus received 41 disclosures, created one spinoff company and signed 9 commercial agreements (Innovus, 2013). This discovery confirms the importance of the direct contributions of patenting and licensing by which scientific discoveries are made in university laboratories (Lester, 2005).

5.4. Conclusion

In conclusion, this chapter detailed the main findings of the policy analysis and Stellenbosch University's social and economic impact. The aim of the research was to understand the relationship between Stellenbosch University and local development by measuring the impact of the university's community interaction agreements. Drawing on a review of the existing literature, the study incorporated an integrated methodologies approach or FraIM developed by Plowright that compliments a mixed method design (Plowright, 2011). After a brief summary of the study, the study results were discussed, including the results in agreement with what the researcher expected and those that were different from original expectations. The main findings confirmed a substantial social and economic impact of the community interaction agreements both locally on the Stellenbosch and Drakenstein municipalities and beyond.

Chapter 6 Final Conclusions, Limitations and Recommendations for Future Research

The overall impact that the Stellenbosch University community interaction agreements have on the surrounding Stellenbosch and Drakenstein municipalities is, admittedly, difficult to fully capture. Though multiple performance metrics were used in this study, it is still almost impossible to measure all the spillover effects that the university has on the local municipalities. Additionally, the university has impacts that reach far beyond the scope of this study to other areas including Cape Town, the Western Cape, the whole of South Africa and internationally as well. However, the conclusions of this study will hopefully provide a valuable reference to discuss the local and broader impacts of Stellenbosch University with members of the community, alumni, business leaders and government officials. The integrated methodological approach of the study will hopefully also provide for a detailed analysis of the impact of Stellenbosch University and assist with the replication of future studies across Africa and throughout the world.

6.1. Final Conclusions

After months of literature research, information collection and data analysis, the researcher can assuredly report that Stellenbosch University has a major social and economic impact on the surrounding communities of Stellenbosch and Drakenstein. The study produced an integrated conceptual framework which can be used for future studies on the socio-economic impact of higher education institutions and will be discussed in further detail in section 7.2. The final impacts were achieved through a detailed community interaction agreements analysis, social impact analysis and economic impact analysis.

As part of the community interaction agreements analysis, a stated research subsidiary question and objective was to investigate the impact of the local university interaction agreements in Stellenbosch and Drakenstein through perceptions of municipal and university administrators. Additionally, a stated goal of the research study was to improve the understanding of the relationship between universities and local development. As a result, three main patterns emerged from the questionnaires. Pattern one found the importance of long-term collaboration with the agreements. This was important because the principle of sustainability was noted throughout the agreements and the agreements referenced a non-partisan approach to overcome obstacles with political affiliations and subsequent political

agendas. Additionally, formalized regular leadership meetings were held between the university and municipalities and joint projects were incorporated within the municipalities Integrated Development Plan (IDP) that span multiple years which signaled a long-term commitment.

Pattern two noted the importance of a reciprocal relationship between the university and municipality. This was significant because the agreements displayed a reciprocal tone between the two institutions evidenced through language that highlighted both as beneficiaries. Questionnaire respondents confirmed the need to deliver better services to the community using the university's intellectual capital and the university as a beneficiary was shown through its vision to be an active role player in the development of South African society, pursuit for greater relevance and commitment to advancing the university's HOPE project. In addition, the term *mutual benefit* was also emphasized when discussing the pursuit of international initiatives and locally with joint projects identified in the Integrated Development Plans for the municipalities.

However, pattern three noted the community as the primary need for the interaction agreements. This is important because questionnaire respondents and evidence from the agreements suggests that the community need was the primary motivation for the agreements. Although both communities' needs are well documented, the university's need beyond highlighting its desire to be an active role player in the development of South African society and pursuit for greater relevance is largely absent. As a result, the agreements have the perception of a paternalist relationship between university and the municipalities that undermine the previously referenced aim for a reciprocal relationship. In the future, it is recommended that the university emphasize the importance of research projects, practical learning opportunities and service-based learning within the community. Similarly, the university's need for integration of research topics, participants and programs from the community should be discussed in future interaction agreements.

Next, the social impact analysis documented the community interaction projects from several sources including community interaction project leaders and the university's community interaction database. The stated research subsidiary question and objective was to investigate the social impacts of the community interaction agreements by analysis of the community interaction project database and through project leaders that are actively involved in community interaction programs. Additionally, a stated aim of the research study was to

improve the understanding of the relationship between universities and local development. From a social impact perspective, the 2012 performance indicators for Stellenbosch University included the following:

- A total of 177 community interaction projects were conducted of which 71 occurred in the local study area of the Stellenbosch and Drakenstein municipalities;
- A total of 3,066 undergraduates, graduates and staff participated in community interaction projects;
- Project leaders estimated the primary target participants to contain 1,131,962 and the secondary target group participants to contain 766,968;
- Project leader respondents estimated non-university paid or volunteer market wages, materials, and transportation costs for community interaction projects in 2012 at a cost of R17,847,150;
- Project leader respondents also reported 75 percent of projects were located within townships defined as a racially segregated and socio-economically disadvantaged community;
- Agricultural Sciences, Arts & Sciences and Sciences accounted for 117 community interaction projects or 66 percent of the total;
- 76 percent of the projects primarily targeted community adults or children. The remaining target groups included industry consisting of 13 percent, university students at 6 percent and researchers at 4 percent;
- 41 percent of the community interaction projects indicated education as the primary community sector involved followed by 19 percent in agriculture and 13 percent in health;
- 71 percent of the community interaction projects noted empowerment as the primary community impact;
- Approximately 75 or 42 percent community interaction projects focused on schools or included school components. The Hope@Maties project reached 64 surrounding schools, 222 learners and a total of 50 teachers with 104 of the participants registering as students of the university, of which 81 received recruitment bursaries; and
- 32 of the community interaction projects were classified as student service learning projects.

Finally, the economic impact analysis chronicled the university's impact in terms of development of human capital, advancement of entrepreneurship, technology transfer and innovation and contributions to the local economy. The stated subsidiary research question and objective was to measure the economic impact of the Stellenbosch University interaction agreements in the Stellenbosch and Drakenstein municipalities. Additionally, a stated aim of the research study was to improve the understanding of the relationship between universities and local development. From an economic impact perspective, the 2012 performance indicators for Stellenbosch University included the following:

- The total operational impact of Stellenbosch University included more than R4.80 billion worth of economic impacts directly attributable from the university on the surrounding communities;
- Direct expenditures from Stellenbosch University totaled R3.02 billion and generated an overall R4.80 billion of economic activity implying an annual output multiplier of 1.58. The annual output multiplier was determined by taking the calculated overall economic activity in the region divided by the total direct expenditures from Stellenbosch University;
- Of the total R1.16 billion in expenditures to suppliers, an estimated 306 million or 26.6 percent of operating expenditures remained in the local economies of Stellenbosch and Drakenstein;
- The university is a major employer in the region with an annual payroll of R1.45 billion and an estimated R655 million in payroll expenditures directly impacting the Stellenbosch and Drakenstein municipalities;
- The university directly employed a total full time permanent staff of 2,958 consisting of 939 academic staff and 2,019 non-academic staff. Additionally, the university employed an average of 1,376 non-permanent staff members. An estimated 1,950 permanent and non-permanent staff members resided within the study's scope of the Stellenbosch and Drakenstein municipalities in 2013;
- In 2012, the university had a deferred tax balance of R592,000 for property, books and equipment;
- Stellenbosch University received R1.29 billion in revenues from government grants and was able to leverage this funding at a rate of 372 percent;

- Students at Stellenbosch University contributed R1.38 billion to the regional economy which included local expenditures and taxes paid;
- Faculty and staff contributed R10.4 million in local property taxes and vehicle fees;
- Stellenbosch University visitors spent an additional R178 million during their trips to the university; and
- Commercialization of the university's research accounted for a total of 14 companies that reported revenues in excess of R2.11 million and employed 160 people.

6.2. Contributions of the Study

This study endeavored to measure the social and economic impact of Stellenbosch University's interaction agreements with the local surrounding communities and therefore create new knowledge regarding the local impact of higher education institutions. The goals of the study outlined in Figure 3.2 included to develop a framework for future socio-economic studies and to improve the understanding of the relationship between universities and local development.

In terms of addressing the first stated goal, the study produced an integrated conceptual framework which can be used for future studies on the socio-economic impact of higher education institutions. This is important because it provides an opportunity to capture the full impact of higher education institutions by articulating the social and economic influence that higher education institutions bring to a community and by giving each equivalent weight.

As far as the second stated goal and within a South Africa context, the study furthered understanding of the relationship between universities and local development by contributing to the social and economic performance indicators for the King III corporate governance report. The King III report builds on prior versions to integrate the financial results and includes long term sustainability which takes into consideration impacts on the surrounding communities (The Institute of Directors in Southern Africa, 2009).

Similarly, the study also contributed to performance indicators and metrics for the South African National Development Plan 2030. The development plan details how universities should contribute through three main functions in society including education and training for employment, new knowledge production, and offer an opportunity for social mobility against the backdrop of the country's past (National Planning Commission, 2012).

Furthermore, this research confirmed the importance of community interaction agreements and similar public policy documents for universities in South Africa and internationally to engage local communities in addressing social and economic issues. The agreements are an essential first step in developing university-community partnerships by providing a framework for engagement to occur. As noted in section 1.2, it is significant that throughout the initial review of the community interaction agreements between Stellenbosch University and the municipalities, one salient theme of strategic partnerships emerged related to higher education. Defined as an organization or company that has an agreement in place to assist or work with another to collectively achieve each other's goals, strategic partnerships are important for university-community activities at any level. Furthermore, the agreements provide objectives and aims that can be used to measure the progress of interaction between the university and the community.

6.3. Limitations of the Study

One of the primary limitations included the scope of this study. While Stellenbosch University undoubtedly has national and international impacts, the study sought to address the central research question by focusing on the community interaction agreements between the university and the municipalities of Stellenbosch and Drakenstein. In addition, these communities both had direct community interaction agreements signed with the university and were located in relative close proximity to the university. However, when possible the researcher included with a notation the economic and social impacts outside the scope of the study.

Another limitation was the type of data collected in terms of social and economic impact. Much of the data collected in this study was limited to pre-existing metrics located in the public sphere. While this aided the researcher in terms of time and efficiency in carrying out the study, it also limited the study as well. Understandably, the university did not grant the researcher access to non-public information pertaining to the university's payroll and expenditures. However, numerous university staff members assisted the researcher in quantifying and releasing public information when possible.

An additional limitation to the study was the lack of environmental metrics to combine with the social and economic indicators. Although a brief description of the Stellenbosch University's impacts on environmental sustainability were presented the section summarizing

the book *Sustainable Stellenbosch – Opening Dialogues*, more research is needed on the associated challenges and opportunities that the university has on environmental sustainability. Environmental performance indicators need to be developed related to materials, energy use, emissions, effluents and recycling of waste streams (Global Reporting Initiative, 2007).

6.4. Recommendations for future research

6.4.1. Additional South African Universities & Expanded Scope

As discussed in section 7.3, one of the primary limitations involved the scope of this study which included the geographical areas of the municipalities of Stellenbosch and Drakenstein. Future studies should place consideration of reporting impacts in communities in close proximity to the higher education institution as well as national and international impacts. This is important because many higher education impacts occur outside the immediate surrounding communities and those impacts should be captured to avoid understating the overall impact. Additionally, the inclusion of investigations into perceptions of representatives of some key external stakeholders such as community organisations, schools and the general public should be considered for future studies. The involvement of external stakeholders is especially important given the reciprocity concerns found in the conclusions of this study.

In South Africa, Rhodes University located in Grahamstown within the Eastern Cape Province appears to be an excellent site for a future study. Grahamstown shares similarities to Stellenbosch in that both areas are widely considered “university towns” with the university acting as one of the primary economic drivers in the region. Additionally, from a social impact perspective, the university exhibits many of the characteristics associated with an “engaged university” in the community as well. As a result, the researcher is currently exploring the feasibility of conducting a similar socio-economic impact study at Rhodes University.

6.4.2. Supplementary Non-Public Data Types

As discussed in section 7.3, another limitation was the pre-existing public data collected in terms of social and economic impact. Although Stellenbosch University staff members were extremely helpful in aggregating data and making it publicly available, it is recommended

that future research studies request the university's permission for access to non-public data sets. This is especially important for economic data sets pertaining to spending in the local economy which call for extensive data mining. Additionally, the availability of the data sets for the researcher removes the potential for bias from the university and provides additional layer research integrity to the process.

Specifically, future studies should be concerned with non-public economic performance metrics such as detailed payroll data, comprehensive university expenditure totals including payments to contract personnel, and any government taxes or fees not reported in the university's annual report. Studies should also have access to social impact performance metrics such as the number of community engagement projects, total student, faculty and staff volunteers and total volunteer hours. Additionally, the researcher should have access to environmental impact performance metrics such as carbon emissions, energy use and conservation programs that are not publically available.

6.4.3. King III Report for Corporate Governance – University Integrated Reporting

Developed originally by Mervin King, recognized as a leader in corporate governance guidelines in both South Africa and internationally, the King III report builds on prior versions to integrate the financial results and includes long term sustainability which takes into consideration impacts on the surrounding communities (The Institute of Directors in Southern Africa, 2009). The three core elements of the report guidelines include leadership, sustainability and good corporate citizenship. In addition and unlike previous versions, King III is applicable to all entities including private, public and non-profit organizations (The Institute of Directors in Southern Africa, 2009).

The King III report recommends that instead of a separate annual financial report and sustainability report that the two be integrated according to the Global Reporting Initiative's Sustainability Reporting Guidelines (The Institute of Directors in Southern Africa, 2009). Furthermore, King encourages leaders to direct the organization to develop and achieve sustainable social, economic and environmental performance indicators (The Institute of Directors in Southern Africa, 2009). King III operates non-legislatively under “comply or explain” which differs from other “comply or else” corporate governance structures such as the U.S. Sarbanes-Oxley Act (The Institute of Directors in Southern Africa, 2009). However,

many of the King III principles are now effectively under law through the Companies Act of South Africa of 2008.

As a result, more research is needed regarding how South African higher education institutions will respond to the King III integrated reporting requirements. Furthermore, a list of performance indicators related to university sustainability efforts should be researched and developed as well.

6.4.4. Environmental Sustainability

Related to the integrated reporting, King III corporate governance guidelines, environmental sustainability is another research area that should be explored from the university perspective. Although a brief description of the Stellenbosch University's impacts on environmental sustainability were presented in section 4.5, more research is needed on the associated challenges and opportunities that the university has on environmental sustainability topics. This includes the university's impact on natural systems comprising ecosystems, land, air and water. Environmental performance indicators need to be developed related to materials, energy use, carbon emissions, effluents and recycling of waste streams (Global Reporting Initiative, 2007).

6.5. Personal Reflections

This final section describes my personal reflections and the ways I see myself as a future higher education administrator transformed by this experience. As I reflect, I am reminded as to why I wanted to complete a doctoral program in the first place, and that was to build my skill set while applying practical research in higher education. My interest in community and economic development, educational background and my previous professional experience discussed in chapter one led me to eventually take on the subject of universities' social and economic impact. In terms of skill sets, I had acquired basic research skills prior to beginning this doctoral program; however, as a result of this research study, those skills have drastically improved. Specifically, I gained additional competency in several areas including improving my time management, adopting a critical viewpoint and analyzing large amounts of data.

In terms of time management, I have generally considered myself to be an effective time manager prior to beginning this program. However, this study has required a new level of time management skills in terms of preparation and planning. Initially, I began this study full-

time in 2013; however, that quickly changed to a full-time job in 2014 and the expectation of our first son born in June 2014. These events placed time demands on my ability to conduct and finish the research study that eventually would seriously challenge my research timeline. Specifically, I underestimated the time it would take to review and edit the research prior to submitting the final draft. The entire process also required a large degree of personal discipline and sacrifice with other competing priorities such as family and work schedules. However, I also learned the importance of maintaining a healthy work-life balance and to schedule periodic breaks from the research. This new schedule eventually led to a readjustment of the timeline and a projected finish in December of 2015. Overall, I believe this research experience has provided both personal and professional benefits in regards to my time management skills.

Regarding the adoption of a critical viewpoint, prior to this research study, I generally accepted published findings and conclusions as fact without much question. In fact, I think that my viewpoint was often shaped by others without any real self-reflection regarding whether or not I actually agreed with what I just read. However, this research process has taught me to adopt a critical mindset when reading other academic work and more readily point out deficiencies in other research. This mindset has, in turn, helped to address shortcomings in my own research as well and debate the conclusions drawn from my research. The positive role of encouraging a critical viewpoint by my promoter should be discussed here as well. Dr. Newmark provided appreciated and practical advice to a number of issues throughout the research process. However, she always stressed the critical viewpoint as the point of differentiation with doctoral work. Additionally, this critical mindset will be beneficial in my future personal and professional life as well.

Finally, this research experience has helped to build a skill set in order to analyze large amounts of data. My research topic has taught me that it is virtually impractical to analyze every data set possible pertaining to the social and economic impact of higher education institutions. During the literature review, this issue became evident, and I learned to prioritize large volumes of research papers into criteria that best fit my research. Eventually, many of the most significant research contributions made it into the literature review, but the process of determining what was significant to my research was an invaluable experience. Again, this capability will be important in my future personal and professional life.

It is without a doubt that I can say that I have greatly benefited and developed new skill sets through this research experience. Furthermore, this experience has given me the opportunity to contribute to the field through investigation and new knowledge creation. As a future higher education administrator, it is my sincere hope that I can continue to build on findings, conclusions, and recommendations from this research and apply it to future similar study opportunities.

Glossary of Higher Education Terms and Organizations

American Council on Higher Education (ACHE)

The American Council on Higher Education is the largest organization of its kind in the U.S. representing degree-granting institutions presidents, which include both two year and four year colleges, private and public universities, and nonprofit and for-profit institutions (American Council on Higher Education, 2013). The organization has program areas spanning advocacy, leadership, lifelong learning, international education, and policy research and analysis (American Council on Higher Education, 2013).

Association of Public Land Grant Universities (APLGU)

The Association of Public and Land-grant Universities is an organization representing public research universities, land-grant institutions, state university systems, and related organizations conducting research, policy, and advocacy on their behalf in the U.S. (Association of Public Land Grant Universities, 2013). The APLU's stated mission is to advance learning, discovery and engagement (Association of Public Land Grant Universities, 2013). In addition, the association provides a discussion forum for the development of policies and programs that impact higher education (Association of Public Land Grant Universities, 2013).

Carnegie Foundation for the Advancement of Teaching (CFAT)

The Carnegie Foundation for the Advancement of Teaching was founded by Andrew Carnegie in 1905 (Carnegie Foundation for the Advancement of Teaching, 2013). Afterwards in 1906, the organization was chartered by an act of the U.S. Congress. As an independent policy and research center, the Carnegie Foundation for the Advancement of Teaching has a mission focus on improving teaching and learning (Carnegie Foundation for the Advancement of Teaching, 2013). The organization achieves its mission by developing idea networks, individuals and institutions to improve teaching and learning (Carnegie Foundation for the Advancement of Teaching, 2013).

Council for Higher Education (CHE)

As an independent statutory body in South Africa, the Council on Higher Education was established through the Higher Education Act of 1997 and amended through the National Qualifications Framework Act of 2008 (CHE, 2004). CHE has numerous functions including: an advisory role, quality assurance, reporting and development of higher education (CHE, 2004).

Community-Higher Education-Service Partnerships (CHESP)

Developed in 1999, the Community-Higher Education-Service Partnerships initiative was launched from responses to the White Paper on Higher Education Transformation in 1997 (Lazarus et al., 2008). CHESP operational goals included the development of community engagement pilot programs, monitor and evaluative mechanisms, and to use the results generated to inform higher education policy and practices (Lin, 2009). Furthermore, CHESP initiated five complimentary programmes to meet the operational objectives including: grant-making, capacity building, a monitoring and evaluation research program, advocacy, and a resource and information service (Lin, 2009).

Centre for Higher Education Transformation (CHET)

Began in the mid 1990's as a capacity building nongovernmental organization, CHET is led by Nico Cloete and best known for facilitating numerous higher education workshops throughout South Africa. Since 2002, the center has focused primarily on two major research projects including higher education and development and performance indicators (Center for Higher Education Transformation, 2013).

National Commission on Higher Education (NCHE)

Appointed by President Nelson Mandela, the National Commission on Higher Education was instructed to investigate all aspects of higher education and make appropriate policy recommendations (National Commission on Higher Education, 1996). The NCHE developed transformative policies that targeted higher education institutions under the old apartheid government and submitted its final report in August 1996 (National Commission on Higher Education, 1996). The NCHE identified three theoretical pillars to accomplish the higher education transformation agenda in South Africa namely, democratization, greater responsiveness and increased partnerships and cooperation (National Commission on Higher Education, 1996).

National Plan for Higher Education (NPHE)

The National Plan for Higher Education formally provided a framework and process for the restructuring of the South African higher education system (Ministry of Education, 2001). The NPHE outlined implementation steps and required interventions in order to complete the transformation of the higher education system. The plan included a list of achievable goals with corresponding deadlines for institutions of higher education (Ministry of Education, 2001). The plan also included a continued call for all constituencies of higher education to support and implement the NPHE as a way forward for South African higher education (Ministry of Education, 2001).

South African Higher Education Community Engagement Forum (SAHECEF)

The South African Higher Education Community Engagement Forum was formed in 2009 with a total of twenty three public universities and one private university participating. It is important to note that the national community engagement forum arose from a grassroots movement initiated by several practitioners within the South African higher education community. As a result, there have been multiple international conferences hosted by SAHECEF in an attempt to foster an understanding of how higher education institutions can conceptualize, develop practices and integrate community engagement into teaching, learning and research (Akpan et al., 2012).

Appendices

Appendix A: Research Ethics Committee Approval Notice



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Approval Notice New Application

19-Aug-2013
Orr, David D

Proposal #: DESC_Orr2013

Title: Higher Education Strategic Partnerships :The Impact of Stellenbosch University's Community Interaction Agreements on Local Development

Dear Mr David Orr,

Your DESC approved **New Application** received on **28-Jun-2013**, was reviewed by members of the **Research Ethics Committee: Human Research (Humanities)** via Expedited review procedures on **16-Aug-2013** and was approved.

Please note the following information about your approved research proposal:

Proposal Approval Period: **16-Aug-2013 -15-Aug-2014**

Please take note of the general Investigator Responsibilities attached to this letter. You may commence with your research after complying fully with these guidelines.

Please remember to use your **proposal number** (DESC_Orr2013) on any documents or correspondence with the REC concerning your research proposal.

Please note that the REC has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

Also note that a progress report should be submitted to the Committee before the approval period has expired if a continuation is required. The Committee will then consider the continuation of the project for a further year (if necessary).

This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki and the Guidelines for Ethical Research: Principles Structures and Processes 2004 (Department of Health). Annually a number of projects may be selected randomly for an external audit.

National Health Research Ethics Committee (NHREC) registration number REC-050411-032.

We wish you the best as you conduct your research.

If you have any questions or need further help, please contact the REC office at 0218839027.

Included Documents:

Informed consent form staff
Research proposal
Questionnaire student
Informed consent form student
Request for permission
DESC form
Questionnaire -staff
Information sheet
Interview questions
Questionnaire
Informed consent- project leader

Sincerely,

Susara Oberholzer
REC Coordinator
Research Ethics Committee: Human Research (Humanities)

Investigator Responsibilities

Protection of Human Research Participants

Some of the general responsibilities investigators have when conducting research involving human participants are listed below:

1. Conducting the Research. You are responsible for making sure that the research is conducted according to the REC approved research protocol. You are also responsible for the actions of all your co-investigators and research staff involved with this research. You must also ensure that the research is conducted within the standards of your field of research.

2. Participant Enrollment. You may not recruit or enroll participants prior to the REC approval date or after the expiration date of REC approval. All recruitment materials for any form of media must be approved by the REC prior to their use. If you need to recruit more participants than was noted in your REC approval letter, you must submit an amendment requesting an increase in the number of participants.

3. Informed Consent. You are responsible for obtaining and documenting effective informed consent using only the REC-approved consent documents, and for ensuring that no human participants are involved in research prior to obtaining their informed consent. Please give all participants copies of the signed informed consent documents. Keep the originals in your secured research files for at least five (5) years.

4. Continuing Review. The REC must review and approve all REC-approved research proposals at intervals appropriate to the degree of risk but not less than once per year. There is **no grace period**. Prior to the date on which the REC approval of the research expires, it is your responsibility to submit the continuing review report in a timely fashion to ensure a lapse in REC approval does not occur. If REC approval of your research lapses, you must stop new participant enrollment, and contact the REC office immediately.

5. Amendments and Changes. If you wish to amend or change any aspect of your research (such as research design, interventions or procedures, number of participants, participant population, informed consent document, instruments, surveys or recruiting material), you must submit the amendment to the REC for review using the current Amendment Form. You may not initiate any amendments or changes to your research without first obtaining written REC review and approval. The only exception is when it is necessary to eliminate apparent immediate hazards to participants and the REC should be immediately informed of this necessity.

6. Adverse or Unanticipated Events. Any serious adverse events, participant complaints, and all unanticipated problems that involve risks to participants or others, as well as any research related injuries, occurring at this institution or at other performance sites must be reported to Malene Fouch within five (5) days of discovery of the incident. You must also report any instances of serious or continuing problems, or non-compliance with the REC's requirements for protecting human research participants. The only exception to this policy is that the death of a research participant must be reported in accordance with the Stellenbosch University Research Ethics Committee Standard Operating Procedures. All reportable events should be submitted to the REC using the Serious Adverse Event Report Form.

7. Research Record Keeping. You must keep the following research related records, at a minimum, in a secure location for a minimum of five years: the REC approved research proposal and all amendments; all informed consent documents; recruiting materials; continuing review reports; adverse or unanticipated events; and all correspondence from the REC

8. Provision of Counselling or emergency support. When a dedicated counsellor or psychologist provides support to a participant without prior REC review and approval, to the extent permitted by law, such activities will not be recognised as research nor the data used in support of research. Such cases should be indicated in the progress report or final report.

9. Final reports. When you have completed (no further participant enrollment, interactions, interventions or data analysis) or stopped work on your research, you must submit a Final Report to the REC.

10. On-Site Evaluations, Inspections, or Audits. If you are notified that your research will be reviewed or audited by the sponsor or any other external agency or any internal group, you must inform the REC immediately of the impending audit/evaluation.

Appendix B: Institutional Permission Letter



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25 July 2013

Mr David Orr
B111 Bosmans Crossing
Distillery Road
Stellenbosch
7600

Dear Mr Orr,

Concerning research project: *Higher Education Strategic Partnerships: The Impact of Stellenbosch University's Community Interaction Agreements on Local Development*

This proposed research project has been described to have 3 phases. The researcher has institutional permission to proceed with specific parts of the research as described in the application and listed as follows:

1. The researcher has permission to conduct interviews with or administer a web-based questionnaire to Stellenbosch University (SU) staff as described in phase 1 of the research project.
2. The researcher has permission to administer a web-based questionnaire to project leaders who are actively involved in SU community interaction programmes as described in phase 2 of the research project.
3. The researcher has permission to administer a web-based questionnaire to SU staff and students as described in phase 3 of the research project.

This permission is granted on the following conditions:

- the researcher must obtain ethical clearance from the SU Research Ethics Committee,
- the researcher must obtain the participants' full informed consent for all the facets of their participation,
- participation is voluntary,
- participants may withdraw their participation at any time, and without consequence,
- no personal details of the participants may be captured without the consent of the participants,
- participants may only be directly contacted if they have agreed to such contact,



Afdeling Institusionele Navorsing en Beplanning • Institutional Research and Planning Division
Privaatsak/Private Bag X1 • Stellenbosch • 7602 • Suid-Afrika/South Africa
Tel. +27 21 808 3967 • Faks/Fax +27 21 808 4533

- data must be collected in a way that ensures the anonymity of all participants,
- individuals may not be identified in the results of the study,
- data that is collected may only be used for the purpose of this study,
- data that is collected must be suitably protected,
- data that is collected must be destroyed on completion of this study,
- the privacy of individuals must be respected and protected.

Institutional permission for the use of SU financial information as stipulated in the application cannot be given. The said institutional information does not reside in the public domain and is for internal use only. The researcher does not have institutional permission to access this information. The researcher does not have institutional permission to apply this information for research purposes.

The researcher must act in accordance with SU's principles of research ethics and scientific integrity as stipulated in the *Framework Policy for the Assurance and Promotion of Ethically Accountable Research at Stellenbosch University*.

Stellenbosch University cannot share the personal information (i.e. email addresses) of its staff, students and other associates with the researcher for research purposes. The researcher must contact the Division for Institutional Research and Planning to solicit the participation SU staff, students and other associates of the university.

Best wishes,



Jan Botha
Senior Director: Institutional Research and Planning

Appendix C: Research Study General Information Leaflet



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Email: dorr06@gmail.com

GENERAL INFORMATION LEAFLET

INTRODUCTION

You are asked to participate in a research study conducted by David Orr, M.P.A., a PhD student from the Department of Education at Stellenbosch University. This information leaflet is to help you to decide if you would like to participate. Before you agree to take part in this study, you should fully understand what is involved. If you have any questions, which are not fully explained in this leaflet, do not hesitate to ask the researcher. You should not agree to take part unless you are completely satisfied about what is expected of you.

WHAT IS THE PURPOSE OF THIS STUDY?

I am a PhD student at Stellenbosch University, South Africa. I am collecting data from students, faculty and staff using electronic questionnaires and interviews (staff only) concerning items that will help to measure the impact of community interaction agreements in the surrounding communities.

Study Title: Higher Education Strategic Partnerships: The Impact of Stellenbosch University's Community Interaction Agreements on Local Development

WHAT IS EXPECTED OF YOU DURING THIS STUDY?

As a participant, you will be expected to participate by completing an electronic questionnaire. Certain SU staff members (only) may be requested to participate in a person to person interview following the completion of the electronic questionnaire.

WHAT ARE YOUR RIGHTS AS A PARTICIPANT IN THIS STUDY?

Your participation in this study is entirely voluntary, and you can refuse to participate or stop at any time without stating any reason. Your withdrawal will involve no penalty or loss of benefits. As all data collected remains confidential and anonymous, please note that once data has been transcribed and analysed, tracing of information to a particular participant will be unattainable, and recall of consent at this stage will not be possible. If you have questions regarding your rights as a research subject, contact Malene Fouche (+27 21 8084622; mfouche@sun.ac.za) at the Division for Research Development, Stellenbosch University.

ARE ANY OF THESE STUDY PROCEDURES LIKELY TO RESULT IN DISCOMFORT OR INCONVENIENCE?

Involvement in the study will take time for participation, which is highly appreciated. There will be no other discomfort or inconvenience.

WHAT ARE THE RISKS INVOLVED?

There are no risks involved in participation in this study.

CONFIDENTIALITY

All information obtained during the interview is strictly confidential. Data that may be reported in scientific journals and the final dissertation will not include any information that identifies you as a participant in this study.

SOURCE OF ADDITIONAL INFORMATION

If you have any questions or concerns about the research, please feel free to contact the researcher, David Orr at +27 78 670 2344 or dorr06@gmail.com or the promoters, Prof. Rona Newmark, at +27 21 8084 812 or rnew@sun.ac.za or Dr. Jerome Slamat jaslamat@sun.ac.za at +27 21 808 3639.

Appendix D: Informed Consent University and Municipal Staff Interviews



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STELLENBOSCH UNIVERSITY CONSENT TO PARTICIPATE IN RESEARCH

Higher Education Strategic Partnerships: The Impact of Stellenbosch University's Community Interaction Agreements on Local Development

University and Municipal Staff Interviews

You are asked to participate in a research study conducted by David Orr, M.P.A. from the Department of Curriculum Studies at Stellenbosch University. If you elect to participate, it is important to note the results of this study will be contributed to a dissertation. You were selected as a possible participant in this study based on your potential familiarity and knowledge of Stellenbosch University's community interaction agreements.

1. PURPOSE OF THE STUDY

This voluntary study is being conducted to estimate the community and economic impact of Stellenbosch University on the regional and local economies. We are interviewing municipal and university staff concerning MOUs and university-municipal interaction agreements.

2. PROCEDURES

If you volunteer to participate in this study, we would ask you to do the following things:

Please take a few minutes to complete a short web-based questionnaire survey and/or in person interview. The survey and/or interview, on average, can be completed in about 5-10 minutes.

3. POTENTIAL RISKS AND DISCOMFORTS

None

4. POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

This study and the information collected are important because it will help estimate the community and economic impact of Stellenbosch University on the regional and local economies.

5. PAYMENT FOR PARTICIPATION

None

6. CONFIDENTIALITY

Any information that is obtained in connection with this study that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of a password protected computer and backed up on a password protected storage device. The researcher will be the only person with access to the password. The data will be kept for 3 years following initial collection and will be destroyed within 6 months of the completion of the PhD program.

If the results of the study are published, no identifying personal information will be included in any unpublished or published documents.

7. PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you do not want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

8. IDENTIFICATION OF INVESTIGATORS

If you have any questions or concerns about the research, please feel free to contact:

Principal Investigator: David Orr s17419751@sun.ac.za 078 670 2344 cell

Promoter: Dr. Rona Newmark rnew@sun.ac.za 082 440 0726 cell

Co-Promoter: Dr. Jerome Slammat jaslamat@sun.ac.za +27 21 808 3639

9. RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your rights as a research subject, contact Ms. Maléne Fouché [mfouche@sun.ac.za; 021 808 4622] at the Division for Research Development.

SIGNATURE OF RESEARCH SUBJECT OR LEGAL REPRESENTATIVE

The information above was described to [me/the subject/the participant] by [name of relevant person] in [Afrikaans/English/Xhosa/other] and [I am/the subject is/the participant is] in command of this language or it was satisfactorily translated to [me/him/her]. [I/the participant/the subject] was given the opportunity to ask questions, and these questions were answered to [my/his/her] satisfaction.

[I hereby consent voluntarily to participate in this study/I hereby consent that the subject/participant may participate in this study.] I have been given a copy of this form.

Name of Subject/Participant

Name of Legal Representative (if applicable)

Signature of Subject/Participant or Legal Representative

Date

SIGNATURE OF INVESTIGATOR

I declare that I explained the information given in this document to _____ [name of the subject/participant] and/or [his/her] representative _____ [name of the representative]. [He/she] was encouraged and given ample time to ask me any questions. This conversation was conducted in [Afrikaans/*English/*Xhosa/*Other] and [no translator was used/this conversation was translated into _____ by _____].



11/3/2013

Signature of Investigator

Date

Appendix E: University and Municipal Administrator Questionnaires

Municipal Administrators and University Faculty & Staff

Completed Voluntary Consent Form: Yes [] No []

Hello. This is a voluntary study being conducted to estimate the economic impact of Stellenbosch University on the regional and local economies. You were selected as a possible participant in this study based on your potential familiarity and knowledge of Stellenbosch University's community interaction agreements.

We would appreciate you taking a few minutes to complete this web-based questionnaire survey and/or in person interview. The survey and/or in person interview on average can be completed in about 5 - 10 minutes.

1) Discuss the MOU agreement with Stellenbosch University and why you feel it is important.

2) Explain, if possible, about the importance of formalizing regular meetings between the rector & mayor. How many meetings have occurred since the MOU went was signed?

3) What programs have been established to address capacity-building and development needs through the intellectual capital of the university and civic infrastructure of the town? What were the type and target population of the programs?

4) Explain more about the importance of the joint university-community interaction projects and who you feel benefits from them? Can you give examples both community & economic development related?

5) Have the initiatives or projects been incorporated into the Integrated Development Plan (IDP) of the Municipality? If so, how many and when?

Appendix F: Informed Consent Project Leader Questionnaire



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STELLENBOSCH UNIVERSITY CONSENT TO PARTICIPATE IN RESEARCH

Higher Education Strategic Partnerships: The Impact of Stellenbosch University's Community Interaction Agreements on Local Development

Project Leader Questionnaire

You are asked to participate in a research study conducted by David Orr, M.P.A. from the Department of Curriculum Studies at Stellenbosch University. If you elect to participate, it is important to note the results of this study will be contributed to a dissertation. You were selected as a possible participant in this study based on your potential familiarity and knowledge of Stellenbosch University's community interaction agreements.

1. PURPOSE OF THE STUDY

This voluntary study is being conducted to estimate the impact of Stellenbosch University interaction agreements on the surrounding communities. We are interviewing community interaction project leaders concerning their projects in addition to collecting information for the community interaction database.

2. PROCEDURES

If you volunteer to participate in this study, we would ask you to do the following things:

Please take a few minutes to complete a web-based questionnaire survey. The survey on average can be completed in about 5 minutes.

3. POTENTIAL RISKS AND DISCOMFORTS

None

4. POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

This study and the information collected are important because it will help estimate the economic impact of Stellenbosch University on the regional and local economies.

5. CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of a password protected computer and backed up on password protected storage device. The researcher will be the only person with access to the password. The data will be kept for 3 years following initial collection and will be destroyed within 6 months of the completion of the PhD program. If the results of the study are published, no identifying personal information will be included in any unpublished or published documents.

6. PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you do not want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

7. IDENTIFICATION OF INVESTIGATORS

If you have any questions or concerns about the research, please feel free to contact:

Principal Investigator: David Orr s17419751@sun.ac.za 078 670 2344 cell

Promoter: Dr. Rona Newmark rnew@sun.ac.za 082 440 0726 cell

Co-Promoter: Dr. Jerome Slamat jaslamat@sun.ac.za +27 21 808 3639

8. RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your rights as a research subject, contact Ms. Maléne Fouché [mfouche@sun.ac.za; 021 808 4622] at the Division for Research Development.

SIGNATURE OF RESEARCH SUBJECT OR LEGAL REPRESENTATIVE
--

The information above was described to [*me/the subject/the participant*] by [*name of relevant person*] in [*Afrikaans/English/Xhosa/other*] and [*I am/the subject is/the participant is*] in command of this language or it was satisfactorily translated to [*me/him/her*]. [*I/the participant/the subject*] was given the opportunity to ask questions and these questions were answered to [*my/his/her*] satisfaction.

[*I hereby consent voluntarily to participate in this study/I hereby consent that the subject/participant may participate in this study.*] I have been given a copy of this form.

Name of Subject/Participant

Name of Legal Representative (if applicable)

Signature of Subject/Participant or Legal Representative **Date**

SIGNATURE OF INVESTIGATOR

I declare that I explained the information given in this document to _____ [*name of the subject/participant*] and/or [his/her] representative _____ [*name of the representative*]. [*He/she*] was encouraged and given ample time to ask me any questions. This conversation was conducted in [*Afrikaans/*English/*Xhosa/*Other*] and [*no translator was used/this conversation was translated into* _____ by _____].



Signature of Investigator

11/3/2103

Date

Appendix G: Community Interaction Projects - Questionnaire

Completed Voluntary Consent Form: Yes [] No []

Hello. This is a voluntary study being conducted to estimate the impact of Stellenbosch University Interaction Agreements on the surrounding local and regional communities. You were selected as a possible participant in this study based on your potential familiarity and knowledge of Stellenbosch University interaction projects, programs and initiatives.

We would appreciate you taking a few minutes to complete this web-based survey. The survey on average can be completed in about 5 minutes.

**For clarification purposes, the Drakenstein Municipality includes the towns of Paarl, Wellington, Saron, Gouda and Simondium and the Stellenbosch Municipality includes the towns of Stellenbosch, Franschoek and Pniel.

1. Please list the name of the community interaction project, program or initiative that you are involved in.

[blank]

2. The Stellenbosch University community interaction project, program or initiative that I am involved with has a measurable community or economic impact.

[] Strongly Agree [] Agree [] Neutral [] Disagree [] Strongly Disagree

3. Based on your response to the previous question, if you felt the Stellenbosch University community interaction projects, programs or initiatives that you are involved with have a measurable impact please explain how they have an impact: [blank]

4. The Stellenbosch University community interaction project, program or initiative that I am involved with primarily benefits Stellenbosch University students, faculty and staff.

[] Strongly Agree [] Agree [] Neutral [] Disagree [] Strongly Disagree

5. The Stellenbosch University community interaction project, program or initiative that I am involved with primarily benefits the community defined as “groups of people united by a common location, or to groups of people that are linked intellectually, professionally, and/or politically; that is, geographic communities, communities of interest and communities of practice.”

Strongly Agree Agree Neutral Disagree Strongly Disagree

6. There is a mutual benefit and sense of reciprocity between the Stellenbosch University community interaction projects, programs or initiatives that I am involved in and the community defined as “groups of people united by a common location, or to groups of people that are linked intellectually, professionally, and/or politically; that is, geographic communities, communities of interest and communities of practice.”

Strongly Agree Agree Neutral Disagree Strongly Disagree

7. Based on the reported number of people estimated in your primary group target, please share how many actual people participated over the following years.

2012 2011 2010 2009 2008 2007

8. Based on the number of people estimated in your secondary group target, how many actual participants were there in 2012?

2012 2011 2010 2009 2008 2007

9. Is the primary or secondary group target of your project located in a township as defined by a racially segregated and socio-economically disadvantaged community (ex. Kayamandi, Mbekweni, etc)?

Yes No

10. Please estimate the total cost of providing the community interaction project in terms of non-university paid or volunteer market wages, materials, transportation costs, etc for 2012.

[blank]

Thank you for your time in completing this survey, and the results will be emailed to you after the study is complete.

Appendix H: Informed Consent Faculty & Staff Questionnaire



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STELLENBOSCH UNIVERSITY

CONSENT TO PARTICIPATE IN RESEARCH

Higher Education Strategic Partnerships: The Impact of Stellenbosch University's Community Interaction Agreements on Local Development

Faculty & Staff Questionnaire

You are asked to participate in a research study conducted by David Orr, M.P.A. from the Department of Curriculum Studies at Stellenbosch University. If you elect to participate, it is important to note the results of this study will be contributed to a dissertation. You were randomly selected as a possible participant in this study.

1. PURPOSE OF THE STUDY

This voluntary study is being conducted to estimate the economic impact of Stellenbosch University interaction agreements on the surrounding regional and local economies. We are surveying a sample of faculty and staff concerning items that will help us measure the impact of earning and spending patterns on the local economy.

2. PROCEDURES

If you volunteer to participate in this study, we would ask you to do the following things:

Please take a few minutes to complete a web-based questionnaire survey. The survey on average can be completed in about 5 minutes.

3. POTENTIAL RISKS AND DISCOMFORTS

None

4. POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

This study and the information collected are important because it will help estimate the economic impact of Stellenbosch University on the regional and local economies.

5. CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of a password protected computer and backed up on password protected storage device. The researcher will be the only person with access to the password. The data will be kept for 3 years following initial collection and will be destroyed within 6 months of the completion of the PhD program.

If the results of the study are published, no identifying personal information will be included in any unpublished or published documents.

6. PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you do not want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

7. IDENTIFICATION OF INVESTIGATORS

If you have any questions or concerns about the research, please feel free to contact:

Principal Investigator: David Orr s17419751@sun.ac.za 078 670 2344 cell

Promoter: Dr. Rona Newmark rnew@sun.ac.za 082 440 0726 cell

Co-Promoter: Dr. Jerome Slammat jaslamat@sun.ac.za +27 21 808 3639

8. RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your rights as a research subject, contact Ms. Maléne Fouché [mfouche@sun.ac.za; 021 808 4622] at the Division for Research Development.

SIGNATURE OF RESEARCH SUBJECT OR LEGAL REPRESENTATIVE

The information above was described to [me/the subject/the participant] by [name of relevant person] in [Afrikaans/English/Xhosa/other] and [I am/the subject is/the participant is] in command of this language or it was satisfactorily translated to [me/him/her]. [I/the participant/the subject] was given the opportunity to ask questions and these questions were answered to [my/his/her] satisfaction.

[I hereby consent voluntarily to participate in this study/I hereby consent that the subject/participant may participate in this study.] I have been given a copy of this form.

Name of Subject/Participant

Name of Legal Representative (if applicable)

Signature of Subject/Participant or Legal Representative

Date

SIGNATURE OF INVESTIGATOR

I declare that I explained the information given in this document to _____ [name of the subject/participant] and/or [his/her] representative _____ [name of the representative]. [He/she] was encouraged and given ample time to ask me any questions. This conversation was conducted in [Afrikaans/*English/*Xhosa/*Other] and [no translator was used/this conversation was translated into _____ by _____].



11/3/2013

Signature of Investigator

Date

Appendix I: Faculty & Staff Expenditures Questionnaire

Faculty/Staff Expenditure Survey

Completed Voluntary Consent Form: Yes [] No []

Hello. Your name was selected at random to participate in this voluntary study being conducted to estimate the economic impact of some Stellenbosch University faculty and staff on the regional and local economies. We are surveying a sample of faculty and staff concerning items that will help us measure the impact of student earning and spending patterns on the local economy.

We would appreciate you taking a few minutes to complete this web-based questionnaire survey. The survey, on average, can be completed in about 5 minutes.

Where is your local residence?

Stellenbosch Municipality (Stellenbosch, Franschoek and Pniel) [Code = 1]

Drakenstein Municipality (Paarl, Wellington, Saron, Gouda and Simondium) [Code = 2]

Cape Town [Code = 3]

Western Cape (Rural) [Code = 4]

Other (please specify) [Code = 5]

What is the postal code for your local residence? [Code = 1]

Do you live in:

An apartment or house rented from an individual or company [Code = 1]

A self-owned property (house, apartment, condominium) [Code = 2]

A University -owned property [Code = 3]

Other (please specify) [Code = 4]

For Property Renters Only

What do you pay for rent each month? If you are sharing living quarters with non-family members, please include only the part that you pay. (R)[blank]

Which of the following utility services are included in your rental payment?

Electric [Code = 1]

Natural Gas [Code=2]

Water/ Sewer [Code=3]

Trash [Code=4]

TV [Code=5]

Internet [Code=6]

Telephone (land line) [Code = 7]

Please estimate your monthly payments for the following utilities that are not included in the rental payment. If you are sharing living quarters with non-family members, please include only the part that you pay.

Electric [blank]

Natural Gas [blank]

Water/ Sewer [blank]

Trash [blank]

TV [blank]

Internet [blank]

Telephone (land line) [blank]

Cell Phone (local only) [blank]

For Property Owners Only

What is your best estimate of the current market value of your home (the amount for which you might sell it)?

Less than R500,000 [Code = 1]

R500,000 - R999,999 [Code = 2]

R1,000,000 – R1,999,999 [Code = 3]

R2,000,000 – R2,999,999 [Code = 4]

R3,000,000 – R3,999,999 [Code = 5]

R4,000,000 – R4,999,999 [Code = 6]

R5,000,000 or more [Code = 7]

Please estimate your monthly payments for the following utilities. If you are sharing living quarters with non-family members, please include only the part that you pay.

Electricity [blank]

Natural Gas [blank]

Water/ Sewer [blank]

Trash [blank]

TV [blank]

Internet [blank]

Telephone (land line) [blank]

Cell Phone (local only) [blank]

Household Info

How many people live in your household (include yourself)? [blank]

Family members [blank]

Non-family members [blank]

If you have children, please list the number in your household that are:

Enrolled in public school, grades K-12 [blank]

Enrolled in private school, grades K-12 [blank]

If you are married/ partnered, is your spouse/ partner:

A Stellenbosch University student [blank]

Employed by Stellenbosch University [blank]

Employed in the Stellenbosch area but not by the University [blank]

Employed outside the Stellenbosch area [blank]

Unemployed, but not seeking paid employment [blank]

Unemployed, but seeking paid employment [blank]

Retired [blank]

Other [blank]

What percentage of your household's total wage and salary income come from Stellenbosch University? ([blank]%)

Vehicle Information

Does your household own any vehicles registered locally (in Stellenbosch or surrounding communities previously mentioned)?

Yes [Code 1]

No [Code 2]

What is the market value of your vehicle that is registered locally?

Less than R50,000[Code = 1]

R50,000 – R99,999[Code = 2]

R100,000 – R114,999[Code = 3]

R115,000 – R119,999 [Code = 4]

R200,000 - R299,999[Code = 5]

R300,000 - R399,999[Code = 6]

R400,000 or more[Code = 7]

Don't know[Code = 8]

Visitors

How many visitors (parent, friends, etc.) have you had in the last twelve months in Stellenbosch area? Please count each visit separately, even if the same person visited more than once. Only include your visitors and do not include visitors of roommates.

Please enter numeric text only:

_____ visitors[Code = 1] [Textbox - Numeric]

How many days did your visitors typically stay (per visit)?

Please enter numeric text only:

_____ days[Code = 1] [Textbox - Numeric]

Please estimate how many nights your visitors spent in hotels or motels (per visit):

Please enter numeric text only:

_____ nights[Code = 1] [Textbox - Numeric]

Please use this area for any additional comments you might have:

Thank you for your time!

Appendix J: Informed Consent Student Questionnaire



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STELLENBOSCH UNIVERSITY CONSENT TO PARTICIPATE IN RESEARCH

Higher Education Strategic Partnerships: The Impact of Stellenbosch University's Community Interaction Agreements on Local Development

Student Questionnaire

You are asked to participate in a research study conducted by David Orr, M.P.A. from the Department of Curriculum Studies at Stellenbosch University. If you elect to participate, it is important to note the results of this study will be contributed to a dissertation. You were randomly selected as a possible participant in this study.

1. PURPOSE OF THE STUDY

This voluntary study is being conducted to estimate the economic impact of Stellenbosch University on the regional and local economies. We are surveying a sample of students concerning items that will help us measure the impact of student earning and spending patterns on the local economy.

2. PROCEDURES

If you volunteer to participate in this study, we would ask you to do the following things:

Please take a few minutes to complete a web-based questionnaire survey. The survey on average can be completed in about 5 minutes.

3. POTENTIAL RISKS AND DISCOMFORTS

None

4. POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

This study and the information collected are important because it will help estimate the economic impact of Stellenbosch University on the regional and local economies.

5. CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of a password protected computer and backed up on password protected storage device. The researcher will be the only person with access to the password. The data will be kept for 3 years following initial collection and will be destroyed within 6 months of the completion of the PhD program.

If the results of the study are published, no identifying personal information will be included in any unpublished or published documents.

6. PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you do not want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

7. IDENTIFICATION OF INVESTIGATORS

If you have any questions or concerns about the research, please feel free to contact:

Principal Investigator: David Orr s17419751@sun.ac.za 078 670 2344 cell

Promoter: Dr. Rona Newmark rnew@sun.ac.za 082 440 0726 cell

Co-Promoter: Dr. Jerome Slammat jaslamat@sun.ac.za +27 21 808 3639

8. RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your rights as a research subject, contact Ms. Maléne Fouché [mfouche@sun.ac.za; 021 808 4622] at the Division for Research Development.

SIGNATURE OF RESEARCH SUBJECT OR LEGAL REPRESENTATIVE
--

The information above was described to [*me/the subject/the participant*] by [*name of relevant person*] in [*Afrikaans/English/Xhosa/other*] and [*I am/the subject is/the participant is*] in command of this language or it was satisfactorily translated to [*me/him/her*]. [*I/the participant/the subject*] was given the opportunity to ask questions and these questions were answered to [*my/his/her*] satisfaction.

[I hereby consent voluntarily to participate in this study/I hereby consent that the subject/participant may participate in this study.] I have been given a copy of this form.

Name of Subject/Participant

Name of Legal Representative (if applicable)

Signature of Subject/Participant or Legal Representative

Date

SIGNATURE OF INVESTIGATOR

I declare that I explained the information given in this document to _____ [*name of the subject/participant*] and/or [his/her] representative _____ [*name of the representative*]. [He/she] was encouraged and given ample time to ask me any questions. This conversation was conducted in [Afrikaans/*English/*Xhosa/*Other] and [no translator was used/this conversation was translated into _____ by _____].



11/3/2013

Signature of Investigator

Date

Appendix K: Student Expenditures Questionnaire

Student Expenditure Survey

Completed Voluntary Consent Form: Yes [] No []

Hello. Your name was selected at random to participate in this voluntary study being conducted to estimate the economic impact of Stellenbosch University on the regional and local economies. We are surveying a sample of students concerning items that will help us measure the impact of student earning and spending patterns on the local economy.

We would appreciate you taking a few minutes to complete this web-based questionnaire survey. The survey on average can be completed in about 5 minutes.

Q1 Where is your local residence?

Stellenbosch Municipality (Stellenbosch, Franschoek and Pniel) [Code = 1]

Drakenstein Municipality (Paarl, Wellington, Saron, Gouda and Simondium) [Code = 2]

Cape Town [Code = 3]

Western Cape (Rural) [Code = 4]

Other (please specify) [Code = 5] [Textbox]

Q2 What is your postal code?

Q3 Do you live in:

University housing [Code = 1]

A rental property (not University owned) [Code = 2]

Self-owned property [Code = 3]

Parent-owned property [Code =]

Other (please specify) [Code = 6] [Textbox]

Q4 If you own property or reside in parent-owned property, what is your best estimate of the current market value of your home (the amount for which you might sell it)?

Less than R500,000 [Code = 1]

R500,000 - R999,999[Code = 2]

R1,000,000 – R1,999,999 [Code = 3]

R2,000,000 – R2,999,999 [Code = 4]

R3,000,000 – R3,999,999 [Code = 5]

R4,000,000 – R4,999,999 [Code = 6]

R5,000,000 or more [Code = 7]

Q5 How many people live in your household (include yourself)?

Q6 Do you have children under the age of 18 in the household?

Yes[Code = 1]

No[Code = 2]

Q7 How many months in a year do you live in the Stellenbosch region?

1 month[Code = 1]

2 months[Code = 2]

3 months[Code = 3]

4 months[Code = 4]

5 months[Code = 5]

6 months[Code = 6]

7 months[Code = 7]

8 months[Code = 8]

9 months[Code = 9]

10 months[Code = 10]

11 months[Code = 11]

12 months[Code = 12]

Please estimate your average MONTHLY expenditures in the Stellenbosch area paid to local businesses in the following categories. Include entire housing and utility payments regardless

of where the cheque is sent. If you are sharing expenses, please respond to only that part of the expenses you pay.

Please fill out the fields applicable to your housing situation. Please enter numeric text in South African Rand only:

Q8 Books and school supplies:

Q9 Rent for a NON-university owned property (total amount paid to landlord):

Q10 Mortgage (exclude tax and insurance payments):

Q11 Cell phone (local only):

Q12 Groceries:

Q13 Restaurants and bars:

Q14 Entertainment, recreation, and sports:

Q15 Clothing:

Q16 Laundry/dry cleaning:

Q17 Medical and dental out of pocket:

Q18 Pharmacy (prescription and non-prescription):

Q19 General merchandise (household furnishings, electronics, furniture, appliances, etc.):

Q20 Motor vehicle purchases, repair, fuel:

Q21 Local transit:

Q22 Other personal services (barber shop, beauty shop, fitness):

Q23 Estimate monthly utility payment if not included in rent:

Water:

Sewer:

Electric:

Internet:

Natural gas and/or heating oil:

Cable television:

Telephone:

Q24 Other (please specify below):

Q25 If applicable, please specify what expenditures the "Other" refers to:

Q26 Do you have a job locally? (Please do not include work study or other University employment.)

Yes [Code = 1]

No [Code = 2]

Q27 If you have a local job, how many hours do you work at this job each week on average?

Please enter numeric text only:

_____ hours per week [Code = 1] [Textbox - Numeric]

Q28 What is your hourly wage rate?

Please enter numeric text only:

R _____ per hour [Code = 1] [Textbox - Numeric]

Q29 Do you own a vehicle?

Yes [Code = 1]

No [Code = 2]

Q30 How many vehicles do you own that are registered locally (in the Stellenbosch Region)?

0 [Code = 1]

1 [Code = 2]

2 [Code = 3]

3 [Code = 4]

4 [Code = 5]

5 or more [Code = 6]

Q31 What is the market value of your vehicle that is registered locally?

Less than R50,000 [Code = 1]

R50,000 – R99,999 [Code = 2]

R100,000 – R114,999 [Code = 3]

R115,000 – R119,999 [Code = 4]

R200,000 - R299,999[Code = 5]

R300,000 - R399,999[Code = 6]

R400,000 or more[Code = 7]

Don't know[Code = 8]

Q32 How many visitors (parent, friends, etc.) have you had in the last twelve months in Stellenbosch area? Please count each visit separately, even if the same person visited more than once. Only include your visitors, and do not include visitors of roommates.

Please enter numeric text only:

_____ visitors [Code = 1] [Textbox - Numeric]

Q33 How many days did your visitors typically stay (per visit)?

Please enter numeric text only:

_____ days [Code = 1] [Textbox - Numeric]

Q34 Please estimate how many nights your visitors spent in hotels or B&B's (per visit):

Please enter numeric text only:

_____ nights [Code = 1] [Textbox - Numeric]

Q35 Please use this area for any additional comments you might have:

Thank you for your time! We will email the results of the study to you at a later date.

Appendix L: Memorandum of Understanding Stellenbosch: A Sustainable University Town



Memorandum of Understanding Stellenbosch: A Sustainable University Town

Recognising:

- That Stellenbosch is a university town of national and international renown;
- That Stellenbosch is blessed with many advantages, such as:
 - its historic town centre,
 - its position in the winelands of the Cape,
 - its longstanding reputation for excellence in sport,
 - its temperate climate and natural beauty,
 - its vibrant and diverse communities; but also
- That Stellenbosch remains a divided town, with a legacy from the past manifesting itself in:
 - grave and pressing socio-economic problems,
 - infrastructural backlogs,
 - ecological problems, and
 - great disparities between the wealthy and the poor;
- That the University with its extensive knowledge base plays a key role in the development of human potential.

Stellenbosch University and Stellenbosch Municipality express herewith their Understanding:

- That they have a responsibility, individually and jointly to address the challenges facing Stellenbosch and to work towards a better future for all its inhabitants, temporary or permanent;
- That the exercise of their joint responsibilities can best flow through collaborative efforts under the auspices of the Rector of the University and the Executive Mayor of the Town;
- That addressing the problems and optimising the opportunities of Stellenbosch can best be done by adopting the core principle of sustainability in all spheres of activity, whether that be educational, social, economic, technological, infrastructural or ecological;
- That they will pursue international interaction and initiatives to their mutual benefit.

Accordingly Stellenbosch University and Stellenbosch Municipality herewith commit themselves:

- To a vision of Stellenbosch as a Sustainable University Town, and
- To a mission of "Reinventing Stellenbosch".

And agree:

- To pursue this vision and mission collaboratively through continuing and formalising within their respective structures the regular Rector/Mayor Forum which has already been meeting successfully for some years;
- To work in a non-partisan manner with local business and industry, non-governmental and community organisations towards sustainable local economic development;
- To draw on the intellectual capital available at the University and the civic infrastructure of the Town in capacity-building and addressing the developmental needs of the Town;
- To set up such joint projects as required and feasible;
- That these initiatives will form an integral part of the Integrated Development Plan of Stellenbosch Municipality.

Memorandum van Verstandhouding Stellenbosch: 'n Volhoubare Universiteitsdorp

Ter erkenning daarvan:

- Dat Stellenbosch 'n universiteitsdorp is wat nasionaal en internasionaal bekend is;
- Dat Stellenbosch met baie voordele geseën is, soos:
 - 'n historiese stadskern,
 - 'n ligging in die Kaapse Wynland,
 - 'n langdurige reputasie vir uitnemendheid op sportgebied,
 - 'n gematigde klimaat en natuurlike skoonheid,
 - 'n lewendige en diverse gemeenskap; maar ook
- Dat Stellenbosch steeds 'n verdeelde dorp is met 'n erfenis van die verlede wat gemantleester word in:
 - ernstige en dringende sosio-ekonomiese probleme,
 - infrastrukturele agterstande,
 - ekologiese probleme en
 - groot ongelykheid tussen ryk en arm;
- Dat die Universiteit oor 'n uitgebreide kennisbasis beskik wat 'n sleutelrol speel in die ontwikkeling van menslike potensiaal.

Spreek die Universiteit Stellenbosch en die Stellenbosch Munisipaliteit hiermee hulle Verstandhouding uit:

- Dat hulle individueel en gesamentlik 'n verantwoordelikeheid het om die uitdagings wat Stellenbosch in die gesig staar, aan te spreek en om na 'n beter toekoms vir al die dorp se inwoners, sowel tydelik as permanent, te werk;
- Dat die uitvoering van hulle gedeelde verantwoordelikeheid ten beste kan geskied deur gesamentlike pogings onder die beskerming van die Rector van die Universiteit en die Uitvoerende Burgemeester van die Dorp;
- Dat die aanspreek van die probleme en die optimalisering van die geleentehede van Stellenbosch ten beste uitgevoer kan word deur die kembeginsel te aanvaar van volhoubaarheid op alle aktiwiteitsgebiede, of dit nou opvoedkundig, sosial, ekonomies, tegnologies, infrastruktureel of ekologies is;
- Dat hulle internasionale interaksie en inisiatiewe tot hulle wedersydse voordeel sal nastreef.

Dienooreenkomstig verbind die Universiteit Stellenbosch en die Stellenbosch Munisipaliteit hulle tot:

- 'n Visie van Stellenbosch as 'n Volhoubare Universiteitsdorp en
- 'n Missie wat "Reinventing Stellenbosch" in die vooruit stel,

En kom ooreen:

- Om hierdie visie en missie gesamentlik na te streef deur die voortsetting en formalisering binne hulle onderskeie strukture, van die gereelde Rector/Burgemeesterforum, wat vir etlike jare reeds suksesvol vergader;
- Om opartydig met plaaslike sakeondernemings en nywerheid, nieraerings- en gemeenskapsorganisasies ten bate van volhoubare plaaslike ekonomiese ontwikkeling saam te werk;
- Om tydens kapasiteitsbou en die aanspreek van die streek se ontwikkelingsbehoefes gebruik te maak van die intellektuele kapitaal wat by die Universiteit beskikbaar is en die burgerlike infrastruktuur van die Dorp;
- Om gesamentlike projekte te loods soos noodsaaklik en uitvoerbaar;
- Om hierdie inisiatiewe 'n integrale deel van die Geïntegreerde Ontwikkelingsplan van die Stellenbosch Munisipaliteit te maak.

Signed at Stellenbosch on this 31st day of July 2007

Isaziso Sokuqondisana I-Dolophu yaseStellenbosch: Yidolophu eneYunivesithi nenekamva eligcinakalayo

Iyaqondakala into yokuba:

- I-Dolophu yaseStellenbosch ineYunivesithi kwaye inodumo emhlabeni wonke;
- I-Dolophu yaseStellenbosch ibabalwe ngokuba nemibali nezinto zesabizo:
 - Idolophu enemibali,
 - Ukusondelana kwayo nemihlaba yewayini yaseKoloni,
 - Udumo ezenezela lona kwezemidlalo,
 - imozuku yayo ephakathi nobuhle bendalo,
 - uluntu lwayo okuzele ludlami nokuzintlanga ezahlukeyo; nokuba
- Stellenbosch isahlali yidolophu enemibali yocalu-calulo noludlwan:
 - zinzima neengxaki kwezentshlobo noqoqosho,
 - iziseko ezalulelayo ekurukwezeleni kweenkonzo
 - ingxaki malunga ne-ikholoji, kunye
 - nomahluko omkhulu phakathi kwezityebei namahlwempu;
- Ukuba iYunivesithi ngengowimba wolvazi okhaphangalelayo ngalalala indima engundoqo ekuphuhliseni insoothleba ehlakelayo enokwenziwa kunzulu ekuphuhliseni koqoqosho.

I-Yunivesithi yaseStellenbosch noMasipala waseStellenbosch bacacisa ngala mazwi ukuQondisana kwabo:

- Ukuba indawo nanye inendima ekufuneka iyidlale kwaye itsebenziswano ibalulekile ekufumaneni isombululo kowimacimngeni ezamelenene nayo ukuzeh abahlali baphile engcono ngoku nakwibesha elizayo;
- Ukuba umsebenzi abawenza ngokulunganisweyo ungaveliswa utsole ukuzeh ulufanane ukuphelelelwa yiNgqonyela yeYunivesithi noSodolophu wesiQoqosho sedolophu;
- Ukusombulula ingxaki nokusebenzisa amathuba enawo le dolophu ngendlela kungenzeka kakuhle ngokubambelela kumthetho wokugcinwa kwayo yonke imisebenzi eyenza inkqubo phambili kwezemifundo, kwezentshlobo, kwezinqoqosho, kwezobugcisa, ngokweziseko okanye ngokwe-ikholoji;
- Ukuba baya kuthabatha amanyathelo amathisa badlele noibelelwano namazwe angaphandle ukuzeh baohlele ngokufanayo kwiziqhamo zale mizamo.

I-Yunivesithi noMasipala waseStellenbosch zizibophelela ngokufanayo:

- Kumbono weStellenbosch njegeDolophu eneYunivesithi nenekamva eligcinakalayo, na
- Sekufezekiseni umsebenzi "wokuwaselela iDolophu yaseStellenbosch ngokutsha".

Kwaye ziyangqinelana ukuba ziza:

- Kusebenza ngokubambisana ukufebisa eli phupha ngokudala amafina entsebenziswano neNgqonyela yeYunivesithi okanye uSodolophu kumaziko azo ngokwahluleneyo, ikuzemi eziziquzelela olu nobelelwano zinombalaba esele ziwangaphandle ukusuzela kwiminyaka yangaphambili;
- Ukusebenza ngendlela engenamkhethe namathidhini asekuhlaleni kunye nemizi-mveliso, imibutho engekukhulumenthe neyasekuhlaleni kuphuhliso loqoqosho lwasekhaya ngendlela eginakalayo;
- Ukucaphula kwiminda wokubandakanya bengqondo eYunivesithi nakwiziseko zokumiselela iinkonzo ebanziwi ukuphuhlisa amandla oluntu ukuzeh kufunyanelwe abantu isombululo kwiingxaki zabo;
- Nokumiselela iipjekthi ngendlela ehlanganisweyo neyinto enokwenzeka yankelele nasebantwini;
- Nokuba ezi ziqalo ziza kwenza indawo efunekayo yesiCwangciso soPhuhliso esiHlangeniyo sikaMasipala waseStellenbosch.

Alderman Lauretta Maree, Executive Mayor Stellenbosch Municipality

Prof Russel Botman, Rector and Vice-Chancellor Stellenbosch University

Memorandum van Verstandhouding Memorandum of Understanding L-Memorandum yokuQondisana

Appendix M: Memorandum of Understanding: Drakenstein Municipality and Stellenbosch University



MEMORANDUM OF UNDERSTANDING

Drakenstein Municipality and Stellenbosch University

RECOGNISING:

That Drakenstein Municipality consists of the component towns of Paarl, Wellington, Saron, Gouda and Simondium which are of national and international renown.

That Drakenstein Municipality is blessed with many advantages, such as its historic nature, its central and important position in the Cape Winelands, its sporting facilities and achievements, its temperate climate and natural beauty and its vibrant and diverse communities; but also

That Drakenstein Municipality remains a divided municipality, with a legacy from the past that manifests itself in grave and pressing socio-economic problems, infrastructure backlogs, ecological problems, and great disparities between the wealthy and the poor.

That Stellenbosch University, with its extensive knowledge base, its vision to be an active role player in the development of South African society, its quest for greater

relevance, its commitment to rural development through its HOPE Project and its focus on student success and the promotion of diversity and sustainability plays a key role in the development of human potential in Drakenstein.

**DRAKENSTEIN MUNICIPALITY AND STELLENBOSCH
THEREFORE HEREWITH EXPRESS THEIR UNDERSTANDING**

That they will work jointly towards a better life for the inhabitants of Drakenstein Municipality, and work jointly so that Drakenstein can meet its responsibility to address the challenges it faces.

That the collaboration under the auspices of the Rector and Vice-Chancellor of the University and the Executive Mayor of Drakenstein will be undertaken so that Drakenstein will be able to address its responsibilities and challenges.

That addressing the problems and optimising the opportunities of Drakenstein can best be done by adopting the core principle of sustainability in all spheres of activity, whether educational, social, economic, technological, infrastructural or ecological.

That they will pursue international interaction and initiatives to their mutual benefit.

**ACCORDINGLY, DRAKENSTEIN MUNICIPALITY AND STELLENBOSCH
UNIVERSITY HEREWITH COMMIT THEMSELVES:**

To a vision of Drakenstein Municipality as a sustainable municipality and to a mission of “Reinventing Drakenstein”.

AND AGREE:

To pursue this vision and mission collaboratively through continuing and formalising cooperation within their respective structures.

To work in a non-partisan manner with local business and industry, and with non-governmental, educational and community organisations towards sustainable local economic development.

To draw on the intellectual capital available in the University and on the civic infrastructure of the Municipality in capacity-building and addressing the development needs of the Municipality.

To set up joint projects that is required and feasible; and

That these initiatives will form an integral part of the Integrated Development Plan of Drakenstein Municipality.

**Signed and sealed at Paarl, Western Cape, Republic of South Africa on the 26th day of
January 2011**

COUNCILLOR CHARMAINE MANUEL
Executive Mayor of Drakenstein
Municipality

PROFESSOR H RUSSEL BOTMAN
Rector and Vice-Chancellor
of Stellenbosch University

Appendix N: Community Interaction Sources

Stellenbosch Community Interaction Database: <http://apps.sun.ac.za/CIDB/home.aspx>

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